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January/janvier 1985 Vol. 51 No. 1

JOURNAL

Canadian Dental Association

de l'Association Dentaire Canadienne

The Journal — 50 Years of Service 1985

Le Journal — 50 ans de service 1985

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References: 1. Ostrom, C.A. et al., J Dent Res, 56(3):212-221, 1977. 2. Arends, J., ten Cate, J.M., J Cryst Gro, 53:135-147, 1981. 3. Silverstone, L.M., Caries Res, 11 (Suppl. 1):59-84, 1977. 4. Data on file at Procter & Gamble, Inc. 5. Mobley, M.J., J Dent Res, 60(12):1943-1948, 1981. For further information, please contact Crest Professional Services, P.O. Box 355, Station A, Toronto, Ontario M5W 1C5

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Canadian Dental Association / de l'Association Dentaire Canadienne

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SIGNIFICANCE OF THE JOURNAL OF THE CANADIAN DENTAL ASSOCIATION

Canada is a land of many cultures, different geography and numerous governments which may account for the unique heritage of our profession. The unifying influence of the national professional Journal has affected the development of dentistry in this country. The article by Dr. W. Dunn describes the initial objectives and continuing evolution of the Journal of the Canadian Dental Association during its first fifty years. This historical perspective presents an opportunity to review the past and to discuss the significance of the Journal in the future.

The nature of a profession is such that it demands communication between its members. In this day of technological wizardry the published word remains the universally accepted method for the effective exchange of knowledge and information. Thus the Journal will continue to be the most visible, regular, useful and informative benefit of membership in the Canadian Dental Association.

The Journal will compete with similar publications by providing a comprehensive range of original refereed scientific articles, general information, and dental news of regional, national and international importance. Letters to the editor will encourage constructive criticism and healthy controversy. Regular readership surveys will ensure that the format and content of the Journal are appealing and pertinent.

The Journal will continue to be published in separate French and English editions, as this allows a variety of information to be presented in a compact, easily read format.

The Journal is one method by which our peers, allied health professionals and interested lay persons assess our profession. Their reviews must be based upon accurate, authoritative and relevant information. Such a mandate requires that the Editorial Board has a continual awareness of the many facets of Canadian Dentistry. The significance of the Journal is that it encourages communication with our colleagues thus ensuring a dynamic, vital profession for the next 50 years.

John Hardie
Chairman, Editorial Board

THE FDI CONGRESS, HELSINKI, 1984

Dr. William R. Thompson
Member, FDI Council

Canadian dentistry was well represented by 188 registrants at the 72nd annual World Dental Congress of the Federation Dentaire Internationale, held in Helsinki, Finland, September 25-31, 1984. Total registration was 3,288 from 72 countries, with the greatest representation from the German Federal Republic (507), Finland (392), Sweden (227), Japan (227), and Canada (188).

The Congress was most successful, not only in the quality of the scientific program, but in the organization of a well-integrated dental trade exhibition and a most complimentary social program. Finland is a small country in geographic size, population and resources, including dental personnel. It is therefore to the credit of the Finnish Dental Association and its organizing committee, under the chairmanship of Professor Arje Scheinin, that Finland held its second most successful FDI Congress in the past 25 years.

FDI congresses always commence with impressive opening ceremonies and Helsinki was no exception. In order to accommodate the more than 3,000 registrants, the ceremony was held in an ice arena and featured speeches on the challenges facing dentistry today and in the future, by the chairman of the Finnish organizing committee, the President of the FDI and the Finnish Minister of Health and Social Affairs. In addition, there was band music, soloists and a youth choir, as entertainment. This was followed by a gymnastics display, provided by more than 100 girl gymnasts, who also participated in the traditional Roll Call of Nations. Each country's flag was paraded by one of the gymnasts as the name of the country was called and the specific registrants stood to recognize their flag.

Scientific program

The main themes of the scientific program for the first three days of the Congress were based on the premise that the greatest challenge faced by dentistry today comes not from new technology, equipment or material, but from the changing pattern of oral health. The themes were:

1. Changing patterns of oral health and treatment demands
2. Changing patterns of diagnosis and treatment
3. Sugar, sweeteners, and oral health

The first theme papers sought to quantify the changing patterns of oral health on a global scale and to explore their implications for the general practitioner, the dental educator, and those responsible for planning dental manpower. The second group of theme papers explored new developments in methods of diagnosis and treatment brought about by these changes and by the trend away from intervention and repair, and toward a preventive strategy. The third group of theme papers discussed ways in which caries incidence could be further reduced by the use of various sweetening agents in partial or total substitution for sucrose and corn syrup in the diet. The latter papers also outlined the problems involved in persuading commercial interests that the potential dental benefits of such a change would justify the technical and marketing problems which would ensue.

In addition to the main theme topics, there were specific papers in the fields of Oral Surgery, Orthodontics, Paedodontics, Periodontics, Endodontics, Restorative Dentistry and Dental Materials, as well as clinical demonstrations, table clinics and visits to the Helsinki dental school. Some of the most popular presentations were the symposium on the Scandinavian way of periodontal treatment, the open session on bonding of dental materials to dentine – principles and problems – and the session on forensic dentistry.

In the few days prior to the actual Congress, the four FDI commissions met with their numerous working group members with the following major results:

Commission on oral health, research and epidemiology

- The policy statement on prevention of dental caries and periodontal disease was adopted as an official statement of the FDI and is based on Technical Report No. 20.
- The report on Changing Patterns of Oral Health in 20 Selected Countries was presented as one of the main themes referred to earlier.
- A new activity on the identification of high caries risk individuals and groups, was approved, initially to be a literature review.

Commission on dental education and practice

- A report of the use of modern technology in continuing education programs has been finalized and will be circulated to member associations.
- A report on Ergonomic Education has been approved and will be circulated.
- A paper on the supervision of auxiliaries in dentistry was approved, and will be circulated as an addendum to FDI Technical Report No. 19, on the classification of dental auxiliaries.
- The document on group practice was approved, and will be available as a technical report.
- The final draft of a Code of Ethics has been finalized and will be circulated to member associations for comment.
- The manual on the Planning and Development of Education Programs for Personnel in Oral Health was approved and, as it was a joint FDI/WHO project, will be available from the WHO in Geneva.

Commission on dental products

- The document, Recommendations for Hygiene in Dental Practice, has been finalized, and will be circulated to member associations for review.
- The documents on Dental Anaesthetic Gases – Hazards in Hygiene and Guidelines to Oral Health: Toothbrushes, Dentifrices and Abrasivity, were approved, and will be available as technical reports.

Commission on dental forces dental services

- The recommendations on Barodontalgia were approved.
- An initial meeting was held to prepare for the symposium on Dental Equipment in the Field, to be held in Belgrade in 1985. It is anticipated that equipment will be demonstrated which will be applicable to the military as well as for civilian use in remote areas.

Special session of general assembly

The subject – "Lowering the Barriers to Oral Health Care in Industrialized Countries" – was discussed at a special session of the General Assembly in Helsinki. The papers highlighted the serious problems connected with the emerging discrepancy in industrialized countries, arising from the continuing

improvement in oral health, which goes hand-in-hand with an abundant and increasing number of dentists.

An outline of an FDI policy statement on the title subject was also presented and discussed. It was determined that the draft statement should be sent to all member associations for review and comment. It will then be finalized by a special committee and presented to the General Assembly in Belgrade. In addition, a study on the subject — "Lowering the Barriers to Oral Health Care in *Developing* Countries" — will be initiated. This study will present an entirely different set of problems.

FDI membership and finances

FDI member countries now total 79 and individual supporting membership is approximately 12,000.

The financial situation of the FDI has improved since the return of the American Dental Association last year, and the large attendance at the 1983 Tokyo Congress. These factors resulted in a small surplus, so subscriptions for member associations have been increased by only 3.8% for 1985, and there will be no change in the individual supporting member's fee.

The national treasurer's meeting in Helsinki discussed the FDI treasurer's proposals for an analysis of all aspects of the FDI, related to finance, and the FDI's central registration procedure. The latter will be used for the first time for the Belgrade Congress. Also, the promotion methods used by national treasurers to recruit new members and to encourage attendance at FDI congresses, was reviewed. Dr. Robert Hicks, immediate Past-President of the CDA, is the new FDI National Treasurer for Canada.

Elections

Dr. Frank P. Bowyer (USA), a past president of the American Dental Association, and Dr. Lyla Telivuo (Finland), were elected vice-presidents.

Dr. Katsuo Tsurumaki, (Japan), Director and Treasurer of the Japan Dental Association, was elected to the FDI Council. Dr. William R. Thompson, (Canada), remains a member of this Council.

Dean George S. Beagrie of the Faculty of Dentistry, UBC, was re-elected as a member of the Commission of Dental Education and Practice, and again, was appointed by FDI Council, as Chairman of the Commission.

1985 Annual world dental congress, Belgrade, Yugoslavia

The 1985 FDI Congress will be held in Belgrade from the 21st to the 27th of September.

In view of the wide interest in this Congress, Canadian dentists planning to attend should join the FDI as supporting members through the CDA headquarters, as soon as possible. Such membership ensures eligibility to attend the Congress and will include a preliminary program, if requested. Upon reviewing the program, registration for the Congress should be made immediately, to ensure selected accommodation, tours, etc., are available.

The World Dental Congress in 1986 will be held in Manila, the Philippines, from the 9th to the 15th of November, and in 1987, the Congress will be in Buenos Aires, in Argentina, in October.

NEW HEALTH MINISTER HOPES TO HEAL EXTRA-BILLING WOUNDS

Health Minister Jake Epp, 45, told a news conference just before the opening of the new Parliament that he would like to end the extra-billing feud with Canada's provinces.

Mr. Epp, who was born September 1, 1939 and received a BA and BEd from the University of Manitoba, believes that Canadians entrusted with the responsibility of health care, whether at the provincial or federal level, are capable of working out their differences through negotiation.

The St. Boniface, Manitoba, native was referring to the battles that arose during debate on and passage of, the Canada Health Act in the spring of 1984.

The Act penalizes those provincial governments that allow extra charges to patients for medicare services, by reducing federal medicare grants to those provinces.

The Health Minister, said, however, that the Progressive-Conservative Party supported the Canada Health Act as passed, and now, as the Government of Canada, continues to support it.

The Hon. Jake Epp
Minister of Health & Welfare

Improvement of health care

Mr. Epp feels that the biggest challenge facing his government is the improvement of the health care system this country now has. This is a bigger challenge to his government than bringing an end to the federal-provincial squabbles about extra-billing, he said.

"The focus of our debate has to be the future of health care. That, unfortunately was not sufficiently debated during the discussion of the Canada Health Act. It was an opportunity that was missed," he said.

Mr. Epp made reference to an election promise last summer by Prime Minister Mulroney, that $100 to $150 million in additional health care funds should be made available to match provincial funds budgetted for expanded health care programs.

His major concern now, he said, is the manner in which those funds will be spent. This, he said, must be negotiated with the provinces.

Falling short

A financial analyst has noted that although the federal government will pay about $5.8 billion in aid to the provinces this year for hospital costs and salaries to health care professionals, Ottawa's share, as a percentage of the overall costs has been slowly dropping in recent years. And there are indications, the analyst said, that federal purse strings may be tightened even further.

The provinces, painfully aware of this situation, are becoming increasingly concerned, the analyst concluded.

Mr. Epp appeared to have hinted at this when he noted that one of the major tasks of the Mulroney government is to trim the federal deficit figure and bring in policies to promote economic recovery in Canada.

He said he believed that good economic policy and good social policy go hand in hand.

First elected in 1972

Mr. Epp was first elected to the House of Commons in 1972. During the Clark government regime in 1979, he served as Minister of Indian Affairs and Northern Development.

He attracted favorable attention during the 1980-81 Constitutional debate as chief Conservative spokesman. Mr. Epp also was part of the special Commons-Senate committee that studied and helped to mold the new Canadian Constitution.

For the two years prior to last September's election, he was the Opposition's spokesman on medicare and health matters.

Mr. Epp has served on the House Standing Committee on Labour; Manpower and Immigration; Regional Development, and the Special Joint Committee on Immigration — studying the Green Paper in 1975.

Was a school teacher

Before he entered public life, Mr. Epp taught high school at Steinbach Collegiate Institute in Steinbach, Manitoba, for 11 years. He served also in the Hanover Division Teachers' Association, the Steinbach Centennial Committee and Eastern Manitoba Childrens' Aid Society.

At the municipal level, Mr. Epp was a Steinbach town council member from 1970 to 1972.

HEALTH PROFESSIONALS AND INDUSTRY JOIN IN NUTRITION INSTITUTE

After more than two years of planning, the National Institute of Nutrition (NIN) – a non-profit organization dedicated to advancing knowledge and practice of nutrition in Canada – has been launched by a group of health professionals and business leaders drawn from all parts of the country.

The founding Board of Trustees consists of 16 men and women drawn from the public sector and 12 from the business community. The public trustees include university presidents, medical doctors, nutritionists, and government health officials.

Board Chairman is Dr. Harvey Anderson, Associate Dean (Research) of the Faculty of Medicine and head of the Department of Nutritional Sciences at the University of Toronto. Serving as vice-chairmen are dietitian/nutritionist Louise Lambert-Lagacé of Montreal and Thomas D. Smyth, President and Chief Executive Officer of H.J. Heinz Company of Canada Ltd. While the search is underway for a full-time president, Dr. T. Keith Murray, Executive Director of the Human Nutrition Research Council of Ontario, will act as interim president.

Dr. Murray disclosed that the Institute's 12-member Scientific Advisory Council has identified hypertension and geriatrics as top priorities and will develop position papers for the Institute concerning the role of nutrition on these issues.

At a media briefing, Dr. Murray revealed that the Institute's initial action areas will include: organizing a Nutrition Information Centre to serve as a national resource for health professionals, the media and business; promoting the training and placement of high-calibre nutrition specialists in the educational system; helping scientific societies to organize nutrition symposia or enhancing the nutrition content of their programs; and creating interdisciplinary workshops for the review and evaluation of the topical issues on nutrition.

Dr. Anderson described the Institute's primary aims as (1) to serve as an objective, credible resource and authority on issues related to nutrition; (2) to promote the exchange of nutrition knowledge; (3) to encourage the development of adequate nutrition curricula in the formal education system; and (4) to support and promote nutrition research and the dissemination of its results.

"The move to create such an institution is particularly timely because of the growing interest of Canadians in nutrition and their recognition that poor nutrition is a factor in many of our most important health problems," he said.

Ms. Lambert-Lagacé said that formation of the Institute reflects concern that the vast and increasing flow of nutrition information appears to be contradictory and confusing. "Canadians need clear and concise interpretation of new and existing information to confidently make decisions about food selection and diet," she stressed.

Financing for the Institute has come from its 42 corporate founders and its creation, according to vice-chairman Tom Smyth, is a "superb example of the recognition of social responsibility by industry." He added that it demonstrates "the willingness of executives to accept this responsibility by promoting and supporting research, education and public services in science, medicine and public health without any self-serving motivation."

Mr. Smyth emphasized that Canadian society, including the business sector, faces continually increasing health care costs and that one of the best hopes for controlling such costs lies in better nutrition knowledge and practice which can help prevent illness and disease.

"The recruitment of additional corporate support is being actively pursued," he said, "and we are gratified that more and more companies are recognizing the Institute as an opportunity to participate in sending a clear signal to the medical, educational and governmental communities, as well as the general public, that business has a stake in and is committed to the advancement of nutrition knowledge in Canada."

Contact with dentistry

Dr. Keith Murray, aware of the considerable interest in nutrition within the dental community in Canada, advised The Journal that close contact has been, and will continue to be, maintained between dentistry and the Nutrition Institute.

The Canadian Dental Association was represented at meetings prior to the founding of the Institute.

Dr. Murray indicated that one of the most visible activities of the new organization will likely be held in the late summer of this year, possibly in the form of a symposium.

FORMER HEAD OF DVA DENTAL SERVICES DR. DOUGLAS M. TANNER, PASSES AT 76

Douglas McGill Tanner, MBE, DDS, BScD, MICD, former head of dental services for the Department of Veterans' Affairs, died in Ottawa October 28 last, at the age of 76.

A graduate of the University of Toronto Faculty of Dentistry in 1931, Dr. Tanner, set up a practice in general dentistry in that city.

At the outbreak of the Second World War, Dr. Tanner joined the forces as a dental officer and served with a maxillo-facial team in Italy and North Africa.

Following the war, in which he was decorated as a Member of the British Empire for his services, Dr. Tanner qualified as an oral surgeon and for some time carried on a specialty practice. He later became chief of the Dental Department at the Toronto General Hospital.

In the early 1960s, Dr. Tanner joined the dental services division of the Department of Veterans' Affairs (DVA) and served for about two years as head of dental services at Toronto's Sunnybrook Hospital.

About 23 years ago, he moved to Ottawa with DVA and became Director General of Treatment Services, Dental, until his retirement in 1973.

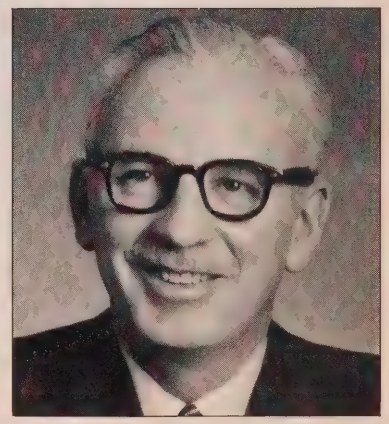
First Canadian Fellow

Dr. Tanner achieved distinction by becoming the first Canadian Fellow of the International College of Dentists.

He was also a Life Member of the Canadian Dental Association.

His wife, the former Billy Button, survives, along with a daughter, Gail and stepdaughter and step-son Heather Mallett and John MacDonald.

The family noted that donations in his memory may be given to the Canadian Fund for Dental Education.



Dr. Douglas M. Tanner

CDA COMMUNICATORS WORKSHOP HELD

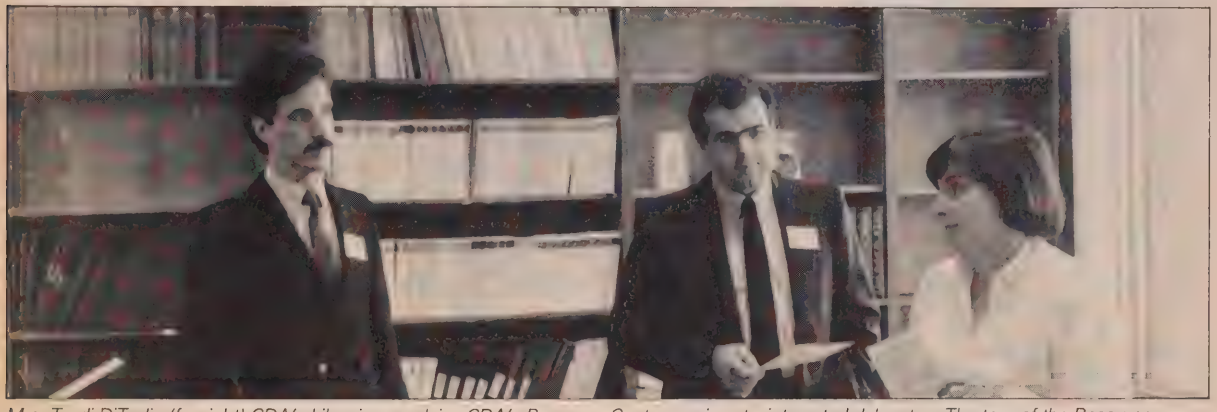
A Communicators Workshop, designed primarily as a tool in the 1985 CDA membership campaign was held in late October in Ottawa.

Each local society in Ontario and Quebec was invited to send a representative, who would be asked to co-ordinate a membership drive for CDA through his or her local society. Of the 43 society representatives invited to attend, over two-thirds did so.

Delegates first attended a short information session on CDA member services, with the keynote address being given by CDA's Past-President, Dr. Robert Hicks. In his address to delegates, Dr. Hicks stressed the CDA's role as that of a national body representing all Canadian dentists, and offered a detailed description of all of the Association's member services. Following this presentation, delegates were given a tour of the

Dr. Robert Hicks (foreground) presents delegates with a picture of the membership services provided by CDA.

Various delegates are shown listening to the afternoon presentations.



Mrs. Trudi DiTrolio (far right) CDA's Librarian, explains CDA's Resource Centre services to interested delegates. The tour of the Resource Centre proved to be one ot the highlights of the headquarters tour for most delegates.

Another headquarters tour highlight which many delegates were unaware of was the computer operations now being used, primarily for membership purposes. Mrs. Jean Scrimger, Director of Administration (back to camera) shows delegates just how the computer works.

Dr. John Hardie (fourth from left) explains the scientific program for the 1985 convention to attendees. Dr. Hardie is the 1985 convention's scientific chairman

Dr. Yosh Kamachi (centre) is shown informing delegates of the new dental awareness program which CDA has recently undertaken.

Attendees are shown in front of CDA headquarters.

CDA headquarters building, where staff members were on hand to answer questions and provide delegates with more information on the services offered to CDA members.

The afternoon session was devoted to providing delegates with details on the upcoming CDA convention, an update on management companies and an introduction to CDA's new dental awareness program.

Comments by delegates were largely favourable, with many commenting that the information on taxation, the headquarters tour and general format of the workshop were excellent.

SPECIALITY SECTIONS NAME OFFICERS

The specialty sections of the Canadian Dental Association recently informed the Association of the officers of each section serving for the next term in 1985.

The Canadian Academy of Endodontics executive includes Dr. Barry Korzen, President, Dr. Fred Weinstein, President Elect, Dr. Herb Borsuk, Treasurer and Dr. John Phillips, Executive Secretary. Dr. Korzen is from Willowdale, Ontario, Dr. Weinstein from Vancouver B.C., Dr. Borsuk from Montreal, Quebec and Dr. Phillips from Oshawa Ontario.

The Canadian Association of Oral and Maxillofacial Surgeons' new President is Dr. Ronald Warren and Past-President is Dr. Murray Mickleborough. Treasurer is Dr. Bernard Lyons and Secretary is Dr. Aron Gonshor.

President of the Canadian Academy of Oral Pathology is Dr. G.P. Wysocki, with President-Elect being Dr. D. Mock. Dr. D.G. Gardner is Vice President and Dr. R.W. Priddy is Secretary-Treasurer.

The Canadian Academy of Oral Radiology's executive serves for a term of three years. President Dr. C.G. Baker, President-Elect Dr. D. Forest, and Secretary-Treasurer Dr. C. Price will all be serving the Association until 1987.

Dr. Ian Milne serves the Canadian Association of Orthodontists for 1985 as President. He is from Ottawa, Ontario. Dr. Morley Bernstein of Winnipeg is President-Elect, while Dr. Frank Shamy of Montreal is Past-President. First and Second Vice-Presidents are Drs. Oleg Kopytov of Montreal and Dr. Wayne Barro of Dartmouth Nova Scotia. Dr. Kevin Hargadon of Ottawa Ontario is Secretary Treasurer.

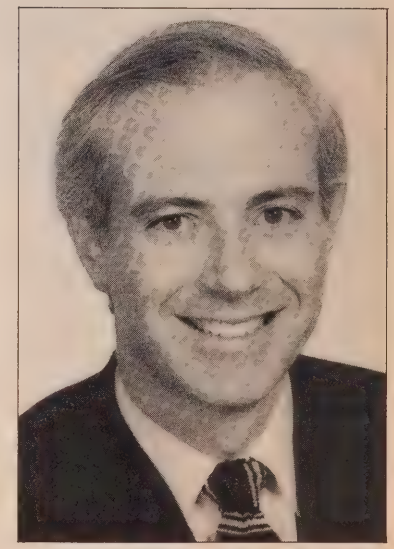
The Canadian Academy of Paedodontics elected Dr. I.C. Bennett President, Dr. F. Pulver as President-Elect and Dr. A.F. Dungy as Secretary-Treasurer. Dr. W.J. Simpson is Past-President of the Academy.

Executive officers for 1985 in the Canadian Academy of Periodontology are: Dr. Allen Wainberg, President, Montreal; Dr. Samuel Newman, immediate Past-President, Toronto; Dr. Jean Turgeon, President-Elect, Montreal; Dr. Edward Chesko, Secretary, Vancouver; Dr. Kenneth Hershenfield, Willowdale Ontario, Treasurer and Dr. Edward Hannigan, Editor, Halifax, Nova Scotia.

The Association of Prosthodontists of Canada recently elected Dr. J. Anderson as President, Dr. P. Sills, Past-President, Dr. B. Graham Secretary-Treasurer and Dr. B. Love, Vice-President. (This information was unconfirmed at press time, as this Association was in the process of an annual meeting).

The Canadian Society of Public Health Dentists, new executive includes Dr. Robert Romcke, Charlottetown PEI, as President, Dr. Roger Ellis of Edmonton Alta., as President-Elect, and Dr. Neil A. Farrell of London Ontario, as Secretary-Treasurer.

As annual meetings are held throughout the year, and new executive officers are announced, the Journal will keep its readers up to date.



Dr. Korzen

CDA CONVENTION '85 IN CANADA'S CAPITAL

Ottawa, as the Capital of Canada, has unique attractions for the visitor.

But it doesn't end there.

It also offers some of the nation's finest hotels, there are gastronomic delights aplenty in its wide variety of restaurants, its wide range of shopping experiences from exclusive specialty shops to extensive shopping centres are a delight to visitors, and top flight entertainment is available in the National Capital Region.

The Canadian Dental Association's annual Convention will be held, September 29-October 2, in a modern, commodious facility — the Ottawa Congress Centre — a stone's throw from Parliament Hill, the National Arts Centre, the National Gallery, and adjoining a major modern shopping centre.

The headquarters hotels are only steps away — Ottawa's French castle-styled Château Laurier, and the new Westin Hotel, which adjoins the Congress Centre.

Beside Rideau Canal

The Congress Centre is located beside Ottawa's historic Rideau Canal, which is bordered by floral displays and extensive driveway system, in park-like surroundings.

In summer, the canal is filled with pleasure craft, many of which travel up the canal from Kingston, at the eastern end of Lake Ontario. Last year, the canal attracted national and international attention, when Pope John Paul II sailed into the heart of Ottawa by this route, on a specially constructed boat.

Pomp and pageantry on Parliament Hill, a stone's throw from Convention headquarters, the Ottawa Congress Centre.

CDA Convention headquarters is in the Ottawa Congress Centre, the lower building with the louvred roof, at the extreme right. It is situated along the banks of the Rideau Canal, foreground. The tall building, (centre) is the Westin Hotel, one of the two headquarters hotels for Convention activities and accommodation.

During the winter, the Rideau Canal becomes the "world's longest skating rink" and thousands of Ottawa's young and old enjoy the exercise on its five-mile-long expanse, within the city limits.

Tours

It is possible to enjoy conducted tours of the Parliament Buildings, the Royal Canadian Mint, the Lester B. Pearson Building, which is the headquarters of the Department of External Affairs, and Laurier House, the home of two Prime Ministers of Canada, Sir Wilfrid Laurier and William Lyon MacKenzie King.

In the fall, a visit to Kingsmere, high in the Gatineau Parkway hills north of Ottawa, in the Province of Quebec, enables visitors to not only visit the attractive sylvan hideaway of the late Prime Minister MacKenzie King, but also to witness the glorious fall colors in maple forests en route.

Within two blocks of the Congress Centre is Ottawa's Byward Market, the earliest business district of the city during the days of the building of the Canal. There are quaint gourmet and ethnic restaurants, specialty shops, giftware and antique boutiques, in restored early buildings. Further east on Sussex Drive, where more of these historic edifices and religous institution landmarks are located, is the home of Canada's Prime Minister, 24 Sussex (not open to the public) and Rideau Hall, the residence of the Governor-General. (The grounds are usually open to the public).

Scientific program

Dr. John Hardie, chairman of the scientific program planning group, advises that this program has been fully arranged.

Subject matter includes: Computers, Paedodontics, Restorative Dentistry, General Medicine, Geriatrics, Prosthetics, Oral Medicine, Ridge Augmentation, Oral Cancer, Periodontics, Tooth Coloring and Endodontics.

The annual Grieve Memorial Lecture is scheduled for Monday, September 30.

The Royal College of Dentists of Canada has scheduled a symposium, which will run concurrently with the Convention.

An added element this year will be a forum, organized by the CDA, at which graduate dental students will make presentations representing the spectrum of dental graduate studies being undertaken in Canada.

Most scientific sessions, dental industry exhibits and table clinics will take place in the Congress Centre. Major social events will also be staged there.

Some of the other social events and working sessions will take place in one of the two hotels.

The formal opening of the Convention will take place in the Ottawa Congress Centre on Sunday, September 29.

The Journal will keep readers informed of special events and details of the Convention in the next few editions of the Journal.

PRESIDENT'S COLUMN

by Dr. Ralph Crawford

The month of January – the first month of a New Year – received it's name from that of the Roman god of the portal, Janus, who possessed the unique feature of two faces. One face looked forward to contemplate that which lay ahead, and the other face looked backward and perceived the past. Thus, January is by tradition the time to take stock, count inventory, make resolutions and plan for the future.

With emphasis on the two words "plan" and "future", it has been the concern of the Executive Council for some time that planning has not been carefully formulated within our Association's actions. . . and its need is critical. Lewis Carrol summarized quite concisely the need for planning when he penned the following. . .

"Cheshire-Puss" she began, rather timidly. . .

"Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the cat.

"I don't much care where. . ." said Alice.

"Then it doesn't matter which way you go," said the cat.

With future planning and taking stock in mind, the CDA Executive Council and the senior staff rom the Ottawa office, Hubert Drouin, Executive Director, Jean Scrimger, Director of Administration, Brian Henderson, Director of Accreditation, Linda Teteruck, Director of Educational Services; met in "retreat" at the Chateau Montebello on October 25, 26, 27th. Two consultants from the Niagara Institute – a non-profit organization with vast experience in business and government organization development – led our CDA Executive and Directors through a series of discussion, soul searching and process orientation towards effective strategic planning.

The Montebello experience enabled those of us whom you have made "trustees" and given the responsibility of guiding your Association to discern our strengths, to discuss our weaknesses and to dialogue our future. Without exception, each of the participants was enthused with the prospects of what strategic planning and development can do for CDA. Enthused to the point whereby another whole day session with the Niagara Institute consultants was held on November 17th, in conjunction with the regular Executive Council meeting. This session enabled staff and Executive Council to develop the tasks and initiate the task forces necessary to systematically move the CDA into a new era of carefully formulated methodology of meeting the future.

At the portal of a New Year, as we look back into the past and as we scrutinize the future, we sense a new vitality and an encouraging awareness of a strengthened CDA. We wish each and all the very best for personal prosperity and continued health. We bid you join our enthusiasm for the future of our Association.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on November 30, 1984.

Common Stock Fund	$79.60660
Fixed Income Fund	$42.05349
Money Market Fund	$30.24661
Balanced Fund	$16.41503

Total assets (market value) of the plan were $40,463,515.

The previous month's figures, as of October 31, 1984, stood as follows:

Common Stock Fund	$79.06642
Fixed Income Fund	$41.02798
Money Market Fund	$29.92208
Balanced Fund	$16.05511

Total assets (market value) of the plan were $40,022,404.

For further information write to: Canadian Dental Service Plans Inc., Ste. 600, 2 Lansing Square, Willowdale, Ontario M2J 4Z3 or call the central information services of CDSPI at 1-800-268-5418 (toll free number for Western Canada, Atlantic Canada and Ontario for Code 807 only, 1-800-268-3411 (toll free number for Quebec and Ontario except Code 807), and 497-7117 (Metro Toronto area).

Briefly

Constant monitoring of the political scene is of increasing importance in the interests of preserving the peaceful and equitable practice of dentistry in all parts of this country.

Officers of the Nova Scotia Dental Association are happy to see the landslide victory of the Buchanan government in their province.

The NSDA has been discussing a number of unresolved matters regarding regulations and legislation, and a change of government would have been a major setback in their dialogue.

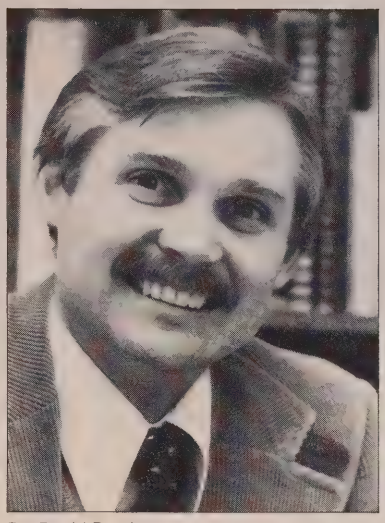
"At least they (the Buchanan government) know what the issues are," Don Pamenter, the NSDA Executive Director, told the Journal. "We don't have to go back to square one and re-educate them."

The election has, however, delayed their negotiations. Mr. Pamenter doesn't think the new session of the Legislature will convene until the middle of this month or early February.

Until recently, dentists in the Province of Quebec have been obliged to have their radiology equiment inspected by a physicist as a condition for a permit issued by that province's Ministry of Social Affairs. Now, modern technology has produced the radiometric cassette, and representatives of the Accreditation Department of the Ministry have advised regulations would be amended and the system changed, with the use of the cassette. These cassettes will be provided to dentists who hold a permit and then returned, to be analyzed under laboratory conditions. The analysis will provide the necessary information to determine the actual condition of the radiology equipment in each dentists' office. Some delays have been incurred, and the ODQ sought, and received, late in 1984, a moratorium in the application of the new regulations, until the problems have been sorted out.

Dr. David Banting, Chairman of the Departments of Paedodontics and Community Dentistry, University of Western Ontario, Chief of Dentistry, Parkwood Hospital, (both in London, Ont.), and an active dental researcher, has been appointed to the Health Research and Development Council of Ontario.

The Council has been established by the government of Ontario to bring the health research community and the Ontario Ministry of Health closer together. The Council has also been established to advise on health research policies, priorities and principles for health research programs.



Dr. David Banting

With the election of Dr. Ralph Crawford as the new CDA President, CDA's popular "Call the President" days have been reintroduced.

Dr. Crawford's first "Call the President" day is scheduled for January 30, 1985. He will be available to answer questions, take complaints or hear your comments from 8:30 am to 4:30 pm, Eastern Standard time, on that day.

Health and Welfare Canada will be undertaking a review of the safety of drugs and chemicals.

The new program is expected to cost about $2 million a year and will ensure that drugs, pesticides and food chemicals which have been on the market for many years still meet modern safety standards.

The program will consist of a number of activities including: a review of old drugs whose risk/benefit ratio may no longer be acceptable in modern medicine; a reassessment of the safety of food additives, colours and flavours that have not been examined according to modern standards; the development of a system for a pre-market approval of new food flavours and packaging materials; a study of the health of pesticide applicators and their families; the preparation of safety guidelines and educational programs for pesticide users.

The recent Communications Co-ordinators workshop held as part of CDA's membership campaign strategy revealed that the CDA Resource Centre is still one of the most popular member services offered by the Association. As a service to Journal readers, a list of the package libraries, (bibliographies generated with the help of the MEDLARS network), which are available to dentists is published here.

- Dental Radiography – April 1982
- Peer Review and Quality Assurance – May 1982
- Geriatric Dentistry – June 1982
- Computers in Dentistry – July 1982
- Dental Materials and Techniques – September 1982
- Community and Preventive Dentistry – September 1982
- Anesthesia in Dentistry – November 1982
- Dental Practice Management – December 1982
- Dental Occlusion – January 1983
- Oral Cancer – February 1983
- Dentists and Stress – March 1983
- TMJ Dysfunction Diagnosis – April 1983
- Mercury Pollution in the Dental Office – May 1983
- Dental Emergencies – June 1983
- Economic Management – July 1983
- AIDS – August 1983
- Pedodontics – October 1983
- Anorexia Nervosa and Bulimia – November 1983
- Periodontal Diseases – December 1983
- Stress and Anxiety in the Dental Patient – January 1984
- Third Molar Extractions – February 1984
- Hepatitis B – March 1984
- Composite Resins and Dental Esthetics – April 1984
- Root Canal Therapy – May 1984
- Mouthprotectors – June 1984
- Pit and Fissure Sealants – July 1984
- Trends in Dentistry – August 1984
- Dental Bonding – September 1984
- Dental Care for Handicapped – October 1984
- Partnership and Group Practice – November 1984
- Dental Office Design – December 1984

CDA NATIONAL CONFERENCE ON DENTAL CARIES DECLINE

IMPLICATIONS FOR PRIVATE PRACTICE AND PUBLIC PROGRAMS

(Organized in conjunction with the Continuing Education Committee of the Faculty of Dentistry, McGill University)

February 1-2, 1985

PROGRAM

TOPIC	PRESENTER
February 1, 1985	
• Decline of Dental Caries What Occurred and Will It Continue?	**Dr. D. Graves** School of Dentistry University of North Carolina
• Root Caries Is it the Caries Problem of the Future?	**Dr. R. Katz** University of Connecticut Health Centre
• Need for Treatment Implications of Disease Trends	**Dr. C. Douglass** Department of Dental Care Administration Harvard School of Dental Medicine
• Sealants in Dental Practice Indications, Effectiveness & Economics	**Dr. L. Ripa** School of Dental Medicine State University of New York at Stony Brook
• Minimally Invasive Non-Metallic Restorations Rationale, Indications & Effectiveness	**Dr. R. Simonson** University of Connecticut Health Centre
• Implications of Third Party Dental Programs	**Dr. J.W. Stamm** Department of Community Dentistry McGill University
February 2, 1985	
• Elements of Risk Assessment and Targeting for Preventive Dental Programs	**Dr. H. Bohannan** School of Dentistry University of North Carolina
• Fluorides for Community Programs	**Dr. D.C. Clark** Department of Community Dentistry McGill University
• Sealants for Community Programs	**Dr. M. Lewis** Director Saskatchewan Dental Plan

Location: McGill University
Montreal, Quebec

For Information Contact: **Mrs. Olga Chodan** (514) 392-4921 — **Dr. Christopher Clark** (514) 392-4536

Accreditation: This course is accredited by the Academy of General Dentistry as a participation course.

Open Attendance

Please detach and return

REGISTRATION FORM

Please enroll me in the course entitled

Dental Caries Decline
Implications for Private Practice & Public Programs

Tuition Fee: $125.00 (fee includes lunch)

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Address _____ Suite No. _____

City _____ Province _____ Postal Code _____

Telephone _____

I enclose a cheque in the amount of $125.00 payable to:

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Mail to:
McGill University
Continuing Dental Education
740 Docteur Penfield, Room 416,
Montreal, Quebec. H3A 1A4

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☐ More information on the Crown Reline & Cementation Kit
☐ Please bill me

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- 56% Reline cementation of poorly fitting crowns on elderly patients that could not afford remaking.
- 49% Cementation of ceramic crowns.
- 36% Endodontic posts.
- 26% Cementation of stainless steel crowns.
- 25% Routine cementation of all crowns.
- 24% Use pulp protection on deep restorations.
- 22% Recementation of facings.
- 21% Frequently, but not always on vital teeth.
- 10% Cementation of the Maryland Bridge.
- 4% Only on non-vital teeth.
- 4% Orthodontic bands.

In addition to the specific questions regarding use, dentists were asked for their general remarks concerning product performance, convenience, etc. Several hundred very positive responses were received from enthusiastic users in private practice and universities. Here are some of them.

"Very impressed with your product."
R.B., Easton, MD

"Have been impressed with your follow up."
R.N., Denver, CO

"Greatly enhanced practice."
D.M., New York City, NY

"Pleased with your product. Feel kit will be invaluable."
D.S., Metairie, LA

"Most welcome addition to my dental materials."
B.G., Branson, MO

"Material easy to work with - sets up quickly."
R.D., Salem, SD

"Products are the best of their kind - keep up R & D."
E.D., Garden Grove, CA

"This stuff is hard!"
F.B., Seabrook, TX

"I am sincerely impressed with products and seminar."
S.D., Cumberland, VA

"Excellent product."
W.C., Del Rio, TX

"New composite materials are outstanding."
C.T., Lake Grove, NY

"Excellent product - it works!"
T.S., Dania, FL

"Den-Mat products are superior to any other brand - period."
S.S., Willard, OH

"Very valuable kit."
R.W., Washington, DC

"Best reline material that I have used to date."
J.B., Stonybrook, NY

"Extremely impressed with adhesion."
J.P., Pikesville, MD

"Your products have completely changed the state of my practice."
H.W., Titusville, FL

"Toughest cement I have ever used - incredible."
J.M., Redwood City, CA

We at Den-Mat feel confident that you will share the enthusiasm of your colleagues when you put this remarkable new product to work solving some of your most perplexing cementation problems.

For further information or to place your order call:
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800/482-4914 Toll-Free in CA
805/922-8491 in AK and HI

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Letters

CONGRATULATIONS FROM ACFD EDITOR

As editor of a sister Canadian dental publication it is my great pleasure to convey the congratulations and best wishes of the Association of Canadian Faculties of Dentistry/L'Association des facultés dentaires du Canada to the *Journal of the Canadian Dental Association/L'Association Dentaire Canadienne* on the occasion of its 50th anniversary. The achievement of this landmark in Canadian dental publishing history is a significant one in the annals of the dental profession, and the editorial staff of the ACFD/AFDC Newsletter wish your Journal continued success in its next half century of recording dental progress.

G.H. Sperber, Editor, ACFD/AFDC Newsletter

DR. SHORE OBITUARY

Thank you for publishing the obituary for my husband, Dr. Nathan A. Shore, in the July 1984 issue of the Journal of the Canadian Dental Association.

It serves as an additional reminder of his contribution to the status of Dental Occlusion and TMJ.

My daughter joins me in thanking you and I shall always treasure your kindness.

Miriam C. Shore, New York, NY

ENJOYED HOBBY ARTICLE

I enjoyed reading about the interesting hobby pursued by Dr. Ralph Crawford of Winnipeg, President of the CDA, not only as one of a series of articles about dentists' special interest activities but also as a fellow collector of dental figurines.

One of the first figures to spur my interest in collecting future figurines whether ceramic, metal, glass etc. was a Lladro dentist presented by my wife when I took up residence in Alberta as a member of the dental faculty. Since that time I have accumulated quite a number of most interesting figurines and an exquisitely carved pewter beer mug depicting dentistry in years gone by. A picture of some of the collection of figurines is enclosed. Like Dr. Crawford, we manage to pick up additions in many of our travels or have even had friends send us notices of businesses marketing such figures (i.e. La Figurine, The Anchorage, Suite 43, 2800 Leavenworth St., San Francisco, California 94133 U.S.A.).

Perhaps there are a number of dentists or auxiliary personnel who collect dental figurines etc. who have information on sources of same. Would it be possible to have interested readers send relevant information to CDA headquarters along with their own name and address and this information would be shared amongst all respondents. I would be pleased to co-ordinate any such replies.

Dr. Roger L. Ellis, Faculty of Dentistry, University of Alberta

APPRECIATION

I wish to express appreciation on behalf of myself and my colleagues for your publishing of our two articles in the October issue of the Journal.

"Tooth Occlusion in School Children"

"A Dental Health Survey of British Columbia School Children"

The articles were very well presented and I hope will be of interest to Canadian dentists. We are very grateful as well for the complimentary reprint copies.

A.S. GRAY, DDS, FRCD(C), Director
Dental Health Services, Victoria, B.C.

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Aqua-fresh has a clean, fresh taste. That could mean better patient compliance and better oral hygiene.

In the fight against cavities, bad breath and plaque, Triple Protection Aqua-fresh is a clear winner.

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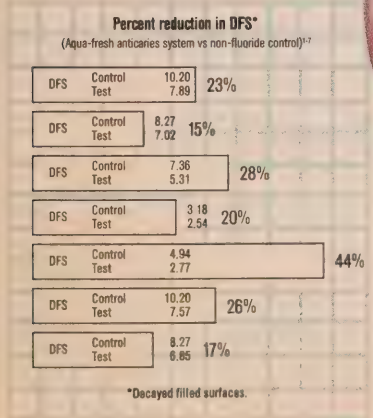
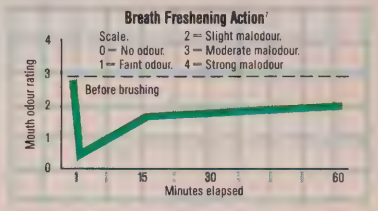
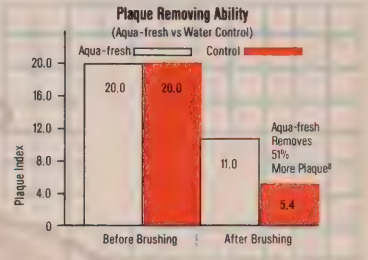


2 FRESHENS BREATH AND REDUCES ORAL MALODOURS.



3 HELPS REMOVE HARMFUL PLAQUE.



Recognized by the Canadian Dental Association.

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*T.M. Reg'd.

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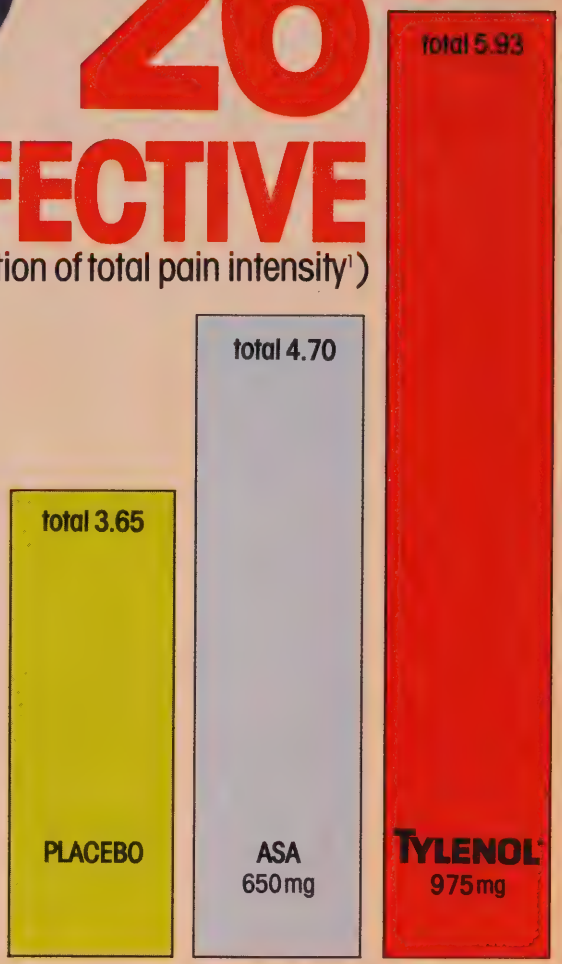

You know that acetaminophen and ASA are equipotent, mg for mg, in the reduction of pain and fever. Studies have also shown that the Extra Strength Tylenol dose provides significantly more pain relief than a standard (650 mg) ASA dose[1]. When more pain relief is necessary, consider the Extra Strength Tylenol option and its benefits for your patient.

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1. **The clinical study:** In a double blind, single dose study of 122 dental patients suffering postsurgical pain, 975 mg acetaminophen was 26% more effective than 650 mg ASA for Sum of Pain Intensity Difference (SPID) at a confidence level greater than 95%. SPID is a measure of total pain intensity reduction during the four-hour study period.
Data on file, McNeil Consumer Products Company

*Trademark

Book Reviews

PERIODONTITIS IN MAN AND OTHER ANIMALS

Roy C. Page and Hubert E. Schroeder

A Comparative Review
S. Karger, New York, New York,
330pp., $89.25 U.S.

This work differs from the current crop of Periodontal texts in a number of ways. The restricted scope of the subject matter and limited number of contributors results in a tightly woven text of the highest quality.

The authors have managed to meld the detailed accuracy of the morphologist with the dynamic awareness of process essential to the experimental pathologist – the result is evident in each section of the book and in the work as a whole. From start to finish one is aware of a consistency of pace and style in the writing that comes when the writers know their material inside out.

Though subtitled a "Review" the authors do not stop at reporting previous work, they actually analyse and, on occasion, challenge it – as in the case of the epidemiological data concerning periodontitis and perhaps most notably when they call into question the current view that the host's own immune system plays a major part in the breakdown of the periodontal tissues. "It appears likely that immune mechanisms are pre-eminently protective and play but a minor role in pathologic tissue destruction."

While they do not flinch from rejecting some widely held positions they are not iconoclasts and strongly reaffirm the central etiological role of bacterial plaque. They also present impressive data which focusses attention on the role played by polymorphonuclear leucocytes in the host response to the pathogenic elements emanating from the plaque. In conjunction with this they stress the concept of the "radius of effectiveness" of plaque toxins and provide a mechanism to account for the creation of infra-bony lesions.

As the title informs us, the authors also review in depth, the literature covering periodontal disease in animals – rodents to primates – domesticated and non-domesticated. The comparative pathology of the disease process in various laboratory animals is described in detail and the ensuing analyses of the differences encountered provides new insights into the nature of the disease. It also generates interesting questions which suggest new research approaches. This part of the text alone makes the book indispensable for those involved in research utilizing animal models. In the last major section of the book the discussion covers the clinical implications of the material covered in the body of the text. It integrates the human and animal data, raising questions but also leaving the reader in no doubt as to the underlying bedrock of the authors' own periodontal philosophy.

It is hoped this text – restrictive in its title yet comprehensive in its survey of pertinent data – objective in its analysis yet challenging in the questions which the authors raise – may be emulated by future writers of dental works.

This book was reviewed by
Dr. W. Ian Vogan, a periodontist in practice in Halifax, Nova Scotia.

PRACTICAL ENDODONTICS – A CLINICAL GUIDE

Edward Besner
Peter Ferrigno

Publisher: Williams and Wilkins
Baltimore, Maryland
164 pp.

With the recent publication of so many texts on endodontics, one wonders why it would be necessary to offer another. Obviously Besner and Ferrigno found it necessary, and came up with yet another clinical guide to endodontics. This type of book appears to be relatively easy to write since it tends to be short and consists mostly of pictures with captions. However, by its very nature it risks the criticism of being incomplete. In the quest of being brief and simple, the authors have walked right into this trap. For example, they repeatedly mention endodontic surgery as the ultimate salvation of otherwise hopeless cases. Nowhere in the book do they give a hint as to how to do these procedures. By this omission do the authors feel surgical techniques are out of the realm of the general practitioner? This, of course, is not necessarily true. Another example regards pretreatment with a metal band. Five large drawings on a single page show the concept of fitting and contouring a band. Nowhere does it show precisely *how* you fit, crimp, and contour the band. The section on post-operative failures, a subject that could fill a whole textbook is covered in only about half a page. The beginner would not get much out of the above information.

Could we ever have an endodontic text without a section on restoring the endodontically treated tooth? The authors do not think so as they give a token bow in that direction. An incredible twelve pages, one drawing to each page, shows in simplified terms how to make a cast post and core. They show only one method – the direct casting (plastic dowel and core build-up) technique – with no mention of pre-formed posts, pin build-ups, or other methods. This is carrying brevity too far!

However, some parts of the book, by its very nature of being concise and brief, are outstanding. The section on clinical testing in the diagnosis chapter is excellent. The authors not only list all the pertinent tests but tell why they are used and the significance of the results. I am especially pleased that they use the modern and easy 'reversible' or 'irreversible' pulpitis categorizations rather than the outdated histological method still found in some texts.

For those practitioners frustrated with repeatedly inadequate anesthesia for the endodontic patient, the section on anesthetic injections would help. The authors present a thorough briefing, with good diagrams, of the various injection sites. If these do not work adequately, they show supplementary injection sites. The clinical drawings are juxtaposed against anatomic drawings of the bared maxillary and mandibular bones showing the precise location of the injection.

For those readers not familiar with splinting techniques, the authors include a good set of photos showing different types of splinting of traumatized anterior teeth. With some imagination, one could actually figure out how to splint with no further help.

The scope of endodontics takes in more than just filing and filling canals. A well presented section relating to this topic indicates a broader range of involvement of the discipline of endodontics than dentists generally think of. A good idea for any future editions would be to fill up those vast areas of empty page surrounding some simple line drawing (no doubt to dramatize it) with more detailed "how to" information so lacking in the book.

A close second in importance to proper cleaning and shaping of the root canal is the total sealing of the canal with gutta percha. The authors outline the different filling techniques including lateral and warm gutta percha, chloropercha, and the up-to-date thermatic condensation (McSpadden) techniques. The illustrations and explanations

are adequate to allow a practitioner to experiment with new techniques.

A strong recommendation by the authors to which I concur is the use of the extended cone paralleling technique or XCP for pre and post-operative radiographs. These give less distortion and make it easier than the bisecting angle technique to identify canals and relative root lengths. However, the XCP method did not save the authors from publishing some of the worst quality radiographs I have ever seen in a textbook. A good number are dull, lifeless and washed out.

If one believes that knowledge is more easily gained by hearing the same thing said in different ways, then there is a justification for any number of endodontic texts and clinical manuals. Whether it is worth spending the money on a new book for information which is already available in previously published works is up to the reader.

This book was reviewed by:
Dr. Joel Edelson,
Associate in Dentistry and
Lecturer (Endodontics)
University of Toronto.
Toronto, Ontario.

OBITUARIES/NÉCROLOGIES

ABRA, M.W.: Mrs. M. Abra, wife of Dr. John Abra, a past president of the CDA, passed away recently in Winnipeg Manitoba. Mrs. Abra was active in the arts community in Winnipeg and did much voluntary work in various clubs and organizations in Winnipeg.

COLLINS HELEN: A well known CDA employee from the 1940's until her retirement in the 1970's, Ms Collins was the secretary to Dr. Don Gullett in the early days of the Canadian Dental Association until his retirement in 1965. Ms. Collins, who was predeceased by her husband, A. Armstrong, passed away recently in Lindsay Ontario, of a heart attack. She was a resident of Lindsay Ontario at the time of her death.

GIFFORD, RJ: A graduate of McGill University in 1950, Dr. Gifford was born and practiced in New Westminster B.C. He was born in 1921, and was residing in New Westminster at the time of his death.

GOLLOP FG: A graduate of the University of Toronto in 1920, Dr. Gollop was born in Milton, Ontario in 1898. He practiced in Ottawa and was residing there at the time of his death.

GROSE L: Dr. Grose, a Life Member of the Canadian Dental Association, was born in 1900. He was a graduate of the University of Toronto in 1925.

KAUKINEN AB: Born in 1917, Dr. Kaukinen was a resident of Thunder Bay Ontario at the time of his death. He graduated from the University of Toronto in 1941.

MCCORMICK CM: An active member of both the Canadian Dental Association and the Manitoba Dental Association, Dr. McCormick was born in Yorkton Saskatchewan in 1922. He graduated from the University of Alberta in 1955. He was a resident of Winnipeg at the time of his death.

PEPPER JB: A Life Member of the Canadian Dental Association, Dr. Pepper was born in Petrolia Ontario in 1907. He graduated from the University of Toronto in 1933.

POISSANT, G.: Résident de Saint-Hubert (Québec) au moment de son décès, le Dr Poissant est né en 1951 et avait obtenu son diplôme de l'Université de Montréal en 1981.

QUEVILLON, E.: Membre à vie de l'Association dentaire canadienne, le Dr Quevillon est né en 1911 et avait obtenu son diplôme de l'Université Laval en 1941.

ROULEAU, G: Dr. Rouleau, who resided in L'Orignal Ontario at the time of his death, was a graduate of the University of Toronto in 1954. He was born in 1928.

SPROULE, JB: A graduate of the University of Toronto in 1941, Dr. Sproule was a resident of Sault Ste Marie Ontario at the time of his death.

THOMPSON, HC: Born in 1912, Dr. Thompson was a Life Member of the Canadian Dental Association. He graduated from the University of Toronto in 1937.

VINET E: Born in 1894, Dr. Vinet was a graduate of Université Laval in 1918. He was a resident of Île Bizard, Quebec at the time of his death.

Resource Centre de documentation

NUTRITION IN DENTAL PRACTICE

ALIMENTATION EN PRATIQUE DENTAIRE

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Abstract: The information presented suggests that persons with impaired dentitions, both with and without a dental prosthesis, may impose upon themselves certain dietary restrictions, which, in time, can compromise their nutritional status and ultimately place them at health risk.
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12. Nakamoto, T. and Mallek, H.M. *Significance of protein-energy malnutrition in dentistry: some suggestions for the profession*. Journal of the American Dental Association, v. 100, no. 3, March 1980, pp. 339-342.
Abstract: A sound nutritional state is extremely important for the maintenance of healthy oral tissues as well as the body in general. Dentistry is, by nature, related to nutrition and dental practitioners should inform their patients and the public of its importance. For this reason, dentists should have a much broader background in nutrition and food sciences.
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Abstract: To investigate the present status of nutrition education for dentists and physicians in Canada, we conducted a survey of the nutrition education programs in 10 Canadian dental and 16 medical schools in the academic year 1982-83. Seven of the dental schools and seven of the medical schools had a separate course in nutrition. The average duration of these courses was 22 hours for the dental schools and 26 hours for the medical schools. Nutrition education was integrated with another discipline in 4 of the dental schools and 11 of the medical schools. The average duration of this type of instruction was 14 hours for the dental schools and 18 hours for the medical schools. Six of the dental schools and eight of the medical schools employed a nutritionist/dietitian to provide instruction in nutrition. We recommend that courses in basic and applied clinical nutrition be incorporated throughout the curricula of Canadian dental and medical schools, and that personnel trained in clinical nutrition be employed to provide instruction in this area.
14. Pietz, C.L. and others. *Nutritional knowledge and attitudes of dental students*. Journal of the American Dental Association, v. 100, no. 3, March 1980, pp. 366-369.
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One copy of the above articles is available at no charge from the library to all CDA members. Non-members will be charged $5. This bibliography was generated with the help of MEDLARS.

La bibliothèque de l'ADC offre gratuitement à ses membres et pour $5 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS, un système informatisé de recherches bibliographiques pour les sciences de la santé. Ajouté à la bibliothèque en février 1982, ce système est à la disposition de tous les membres.

NEW LIBRARY ACQUISITIONS

TITRES EN BIBLIOTHÈQUE

The following current acquisitions are available on loan from the Resource Centre/Library.

Les titres indiqués ci-dessous sont maintenant disponibles à la bibliothèque/centre de documentation de l'ADC.

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5. Houston, W.J.B. *Orthodontic Diagnosis*. 3rd ed. Bristol: Wright•PSG, 1982. 123p. 1 copy.

NEW JOURNAL SUBSCRIPTIONS

1. *Anesthesia and Analgesia*. International Anesthesia Research Society. Cleveland, Ohio.
2. *The Bur*. Loyola School of Dentistry. Maywood, Illinois.
3. *Cleft Palate Journal*. American Cleft Palate Association. University of Pittsburgh, Pittsburgh, PA.
4. *Clinical Preventive Dentistry*. J.B. Lippincott Co., Philadelphia, PA.
5. *Contact Point*. School of Dentistry. University of the Pacific, San Francisco, CA.

1985 CDA CONVENTION
GRADUATE STUDENT PRESENTATIONS

PREAMBLE

At the 1985 National Convention, the Canadian Dental Association is organizing a forum which will allow graduate students to present current information on their specialty or research projects.

ELIGIBILITY

Dentists or dental hygienists who will be enrolled, as of September 1985, in the final year of a graduate program, at a Canadian university.

METHOD

Interested students should submit a typed abstract of a 15-minute presentation describing a current aspect of their major area of study or research activity. This should be accompanied by a black and white passport photograph, a curriculum vitae, and a letter from the Director of Graduate Studies verifying:

1. The enrollment status of the student;
2. That the presentation represents graduate work performed by the student;
3. An estimate of anticipated travel and accommodation expenses.

The abstract and supporting documents should be forwarded to the following address before April 30th, 1985:

Dr. John Hardie
Scientific Chairman
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario. K1G 3Y6

NOTIFICATION

The Scientific Committee of the 1985 Convention will choose eight presentations which represent a spectrum of dental graduate studies being undertaken in Canada. Successful students will be notified early in June 1985.

AWARD

Successful applicants will be invited to present their papers during the Scientific Program of the 1985 Convention which will be held in Ottawa from September 29th to October 2nd. The students will be the guests of the Convention Committee during the day of the presentations. If necessary, funds will be available for travel and accommodation.

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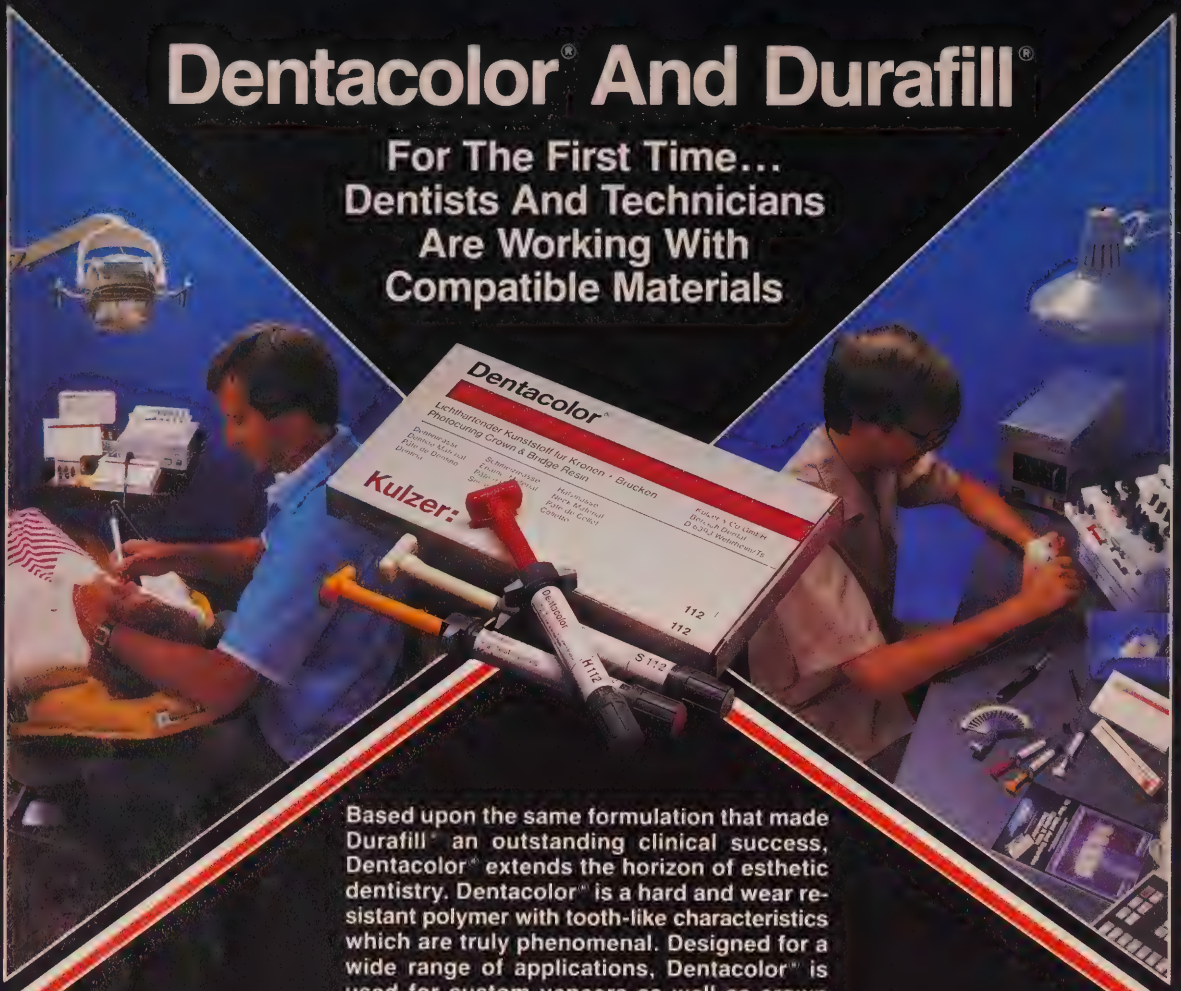

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INDUSTRIAL REAL ESTATE

by Douglas McEwan

DISCUSSION

Industrial real estate is unfamiliar to most dental people because they seldom have contact with it in their daily lives, but the industrial sector is one which offers a number of investment opportunities with specific advantages.

When we speak of industrial real estate here, we are speaking of space provided for the manufacture, storage and shipping of goods produced by one of the large number of small business ventures across Canada. Heavy industrial facilities such as steel plants, oil refineries and auto plants are largely company owned and unavailable to investors except through stock purchases. But there are innumerable small manufacturers and entrepreneurs who require space to carry on their business. These businesses usually require a large open warehouse – like space where the company's product is either manufactured or stored, some office space for administration personnel and some shipping and receiving facility such as loading docks or drive-in truck doors. Most such buildings in Canada are constructed of a steel frame with masonry bearing walls, steel cladding or precast concrete panels at the perimeter and a flat built-up roof. They are characterized by a simple plan and facade treatment and high ceiling space to accommodate industrial activity.

Types of industrial buildings can be broken down into three main categories: large *single-user building, multi-tenant building* and *condominiums*. Opportunities for the real estate investor lie in owning or developing the buildings for use by these many small business entrepreneurs.

There are three main approaches the investor can take:

1) To purchase land suitable for industrial use, build a building and then either sell or lease it to a potential user.

2) To purchase an existing industrial property with an existing tenant for the rental income.

3) To develop an industrial condominium and sell units to various purchasers.

There are markets for each one of these approaches for the following reasons.

Small companies just starting are not in the business of developing buildings and the capital required to purchase a building is capital they can better use to establish the business. At the outset they have no definite idea how quickly their business will progress and therefore no way of ascertaining what their space needs will be. They prefer to lease a space which will be satisfactory for a period of one to five years at a time, thereby minimizing start-up costs and move up to larger facilities as the need arises. This upward mobility of business ventures allows the real estate holder a continuing market for his property, the chance to enhance rental income and the possibility of cashing in on appreciating value should a company or fellow investor wish to purchase the property.

Buildings with good income from established tenants are also available for purchase. When companies want to expand and require extra capital to do so or want to sell a building they occupy, they can sell the property, taking out their equity and lease back the space from the new owner. Other opportunities arise when a real estate holder with good steady income decides to sell off the property for whatever reason.

The condominium market caters primarily to small industrial users who, with an affordable amount down, wish to retain some equity in the space used to house their business. Industrial condominium units are usually under 2,500 s.f. in size and sell in the Toronto area for $60 – $65/s.f. The price to construct such a building is in the neighbourhood of $40/s.f. including land, building and soft costs. This represents a profit of $20 – $25/s.f. to the developer. A one acre industrial lot can support approximately 17,000 s.f. of building. At a $20 – $25/s.f. spread, this represents $340,000 – $425,000 profit.

What are the costs involved in industrial

real estate? Costs in other parts of the country must be individually evaluated, but if we use the Toronto market as an example, land zoned by a municipality for industrial use would sell for $60 – $100,000/ac. unserviced. The cost of roads, storm, sanitary and water lines, hydro and telephone would increase the value to between $150,000 – $250,000. The value of the property is a direct function of its *location* relative to transportation, labour pool, markets being served, the standard of surrounding development and the zoning and tax structure of the governing municipality, says Robert Horton, Toronto industrial properties manager for Morguard Properties Ltd., one of the major industrial real estate developers and land holders in Canada. These prices represent a Toronto market where availability of both serviced and unserviced land is good and the current vacancy rates for existing industrial space is about 2 per cent.

Costs of construction vary according to the type of development. Costs in Toronto for a large, single tenant building with 10-15 per cent of finished office and masonry perimeter walls would be $20 – $25/s.f. with prices rising to $35 – $40/s.f. for a multi-tenant building or condominium due to the extra servicing and partitions required. These building costs would include the cost of permits, connection fees, surveys, consultants, etc. but would not include such things as marketing brochures, advertising, commissions and legals for leases.

One of the advantages of industrial property, Mr. Horton points out, is its relative low cost for higher coverage. An industrial lot of rectangular configuration should provide 35-40 per cent building coverage. This means a one acre lot of 43,560 s.f. could support a building of approximately 17,424 s.f. This compares favourably with commercial structures which support 25-30 per cent of coverage on the same size lot. The amount of coverage (size of building) is a function of the governing municipalities bylaws establishing set backs, parking and loading requirements and driveway access. The bylaws of a municipality therefore become a major component in the viability of development.

The amount of rent industrial property can command is a function of the desirability of the location and the percentage of office space provided in a given building. In Markham, one of the most active areas for industrial development in the Toronto region, industrial space with 10-15 per cent offices (the normal ratio) rents for approximately $4 – $4.50/s.f./yr. On a 17,000 s.f. building therefore, this would mean a yearly income of between $68,000 and $76,500. Industrial leases are generally net-net with all costs of operation being assumed by the tenant. The only costs incurred by the owner are mortgage carrying costs. The owner would be responsible for general maintenance to the building but in industrial structures, which are very simple, such costs are minimal. Using Toronto again as the locale, left's look at the development of single tenant industrial building on a one acre lot. Assume the developer has $200,000 to invest. He purchases a one acre lot for $185,000 using the remaining $15,000 to retain an architect and make application for a building permit. He uses his equity in the property to finance the construction of a 17,000 s.f. building and leases it to a company which takes the whole space. The space rents for $4.50/s.f./yr. Therefore:

Cost of Land	$185,000
Other initial costs	15,000
Total Cash Input	$200,000

Cost of construction – 17,000 s.f.
@ $25/s.f. = $425,000
Carrying costs of $425,000 mort.
@ 12% w/25 yr. amort.
$4,386.00/mo × 12 = $52,632/yr.

Gross Rental Income:

17,000 s.f. @ $4.50	=	$ 76,500
Minus mort. carry	=	52,632
		23,868/yr.

Return on investment =
$\frac{23,868}{200,000} = 11.9\%$

Approximate value of property:

17,000 s.f. × $40/s.f.	=	680,000
Minus total cost of bldg.	=	625,000
		55,000

Return on investment through sale
$\frac{55,000}{200,000} = 27.5\%$

The net return on rental income is enhanced by deductions for depreciation and the appreciating value of the property.

When looking at an industrial property as an investment, the main things to be concerned with are:
1) The presence of existing industrial development and trends for the future.
2) Proximity to good transportation facilities.
3) The demand or vacancy rate of industrial property.
4) Availability of a labour pool.
5) The attitude and bylaws of the governing municipality, especially as they affect coverage.
6) The tax structure of the municipality.
7) The quality of neighbouring industrial buildings.

Carpen DiPaola, a leading developer and syndicator of industrial investment property in the Markham region of Toronto, advises potential investors to locate in areas of prime development activity, paying the premium for the choice property which insures the success of the project. "Don't pioneer, don't take chances on more risky ventures or go with a bargain price. What good is a cheap price on land if you can't rent the space?"

Mr. DiPaola also points out that modern industrial development requires better quality in design than before and the tenants are more concerned with energy efficiency than ever. He also advises it is essential to consult with agents who are working constantly in a given area to be sure of the most appropriate type and size of development to pursue.

Why develop or invest in the industrial property market? What does the industrial sector have to offer? The main advantage is the lower initial cost to invest in industrial. By its very nature, industrial buildings are less expensive to build due to their simplicity of form. Mr. Horton of Morguard Properties also points to the higher coverage generally allowed on an industrial site. There is less competition in industrial development then in the commercial and residential sector where profits may be higher but so are the risks. Also the kind of tenants requiring space in industrial are generally stabler and have a higher success rate.

With the increase in economic activity in Canada the prospects for industrial growth have never been better. Mr. DiPaola points out that the tough years of recession in 1982-83 have changed some attitudes in the business community and companies have trimmed back, setting the stage for some real economic growth in the future. Both he and Mr. Horton point to the new federal government as a critical factor in how the economy, and therefore the industrial building sector, will fare. So far, all indications are good that the next 2-5 years will see healthy growth in industrial activity and the prospects for profit for the real estate investor.

In next month's article we will take a look at the commercial investment scene and examine prospects there.

If there are any particular questions readers would like answered or examined, we would be only too glad to answer your queries. Send questions to:
Douglas McEwan
c/o Darrell Kent Real Estate Ltd.
484 Pape Avenue
Toronto, Ontario, M4K 3P8
Call 1-416-469-5317

COMPUTERS AND THE DENTIST

by Alan Veldman & Steven Yolleck

DISCUSSION

Over the past few months we have run a series of articles on computers titled "Computers and the Dentist". This being the Journal's 50th Anniversary issue we are going to supply you with a consolidated guide to computers and particularly purchasing a dental system. Next month we will resume writing monthly articles on various topics on computers and office management.

Over the past year we have found more and more dentists requesting information on computers and how it might fit into their practice. The most common question fielded by our staff is "What will a computer system do for me?" Well the advantages of a system are three fold.

1. Save time and money. The immediate benefit is time saved in billing and updating your accounts. When your office manager is billing a patient the aged patient account information should be shown on the screen for reference and the new or current account information should be automatically posted to the accounts receivable. Additional statistical information should be posted automatically, such as procedure code analysis, dental income analysis, additional appointment information and recall information.

   During heavy work load periods, a computer system can reduce the possibility of mistakes, relieve tension and ensure that the billing is done correctly. For example, a system should provide you with a series of checks while not allowing the operator to skip over important information.

   Another cost saver is with your accounting. General accounting fees can be cut by more than 60% if the daily and monthly entries are put into the computer by your staff. A fully integrated system with accounts receivable and general ledger system will provide you with complete month-end financial statements and a documented audit trail for your accountant at year end. If you are concerned that you do not have a bookkeeper on staff, there are some integrated dental systems that have easy to use general ledger and accounts receivable systems that your office manager will be able to use.
2. Increase your income. Recall management is a mandatory task that every computer system should be able to handle. There are many ways that vendors have approached this problem with varied success. A good recall system will allow you to enter a recall at time of billing and be able to either set an appointment or set a general month (say six month intervals). This will provide the operator with a listing of recalls by month or specific date. With all your patients on active recall, you can easily calculate the benefits that this will provide.

   Another income generator is the accounts receivable. Accounts receivable control is probably the most often mismanaged and time consuming function in business today. The dental office is no exception. You can appreciate the benefit of easily printing an aging report at the end of a day, and taking five minutes before you go home to review the complete accounts receivable of your practice.

   The computer system should give you all the receivables, large or small, with the same degree of prominence. That is, a $5.00 receivable will show on the aging report in the same manner as the $2,000.00 receivable.

   Another benefit to a computer system is the "marketing function". That is, without any great expenditure of time and money, recall letters, collection letters and general goodwill letters are easily generated with a word processing function.
3. Management control. Management control is essential to the operation of any business. The sooner the information is made available the more valuable it is to your practice. With an integrated system, statements, aging reports, tracking performance and statistical reports can all be easily generated.

With all the advantages to computers there are a few problems that you should be aware of before you buy a system. The following is a short list of four common sense points to consider before you look at a system.

1. Attitude. Before you consider buying a system both you and your staff must have a positive attitude about computers. The most common problem staff may

have is a general fear of computers and that they will lose control of the front office. If you go to demonstrations of the products available you will see that this is no longer a problem with micro computers.

2. Ease of Use. A computer with a sophisticated well written program may do everything. But, if it is not easy to use, your staff will avoid using the system. Programs written today should provide you with screen prompts and easily get you from menu to menu.

3. The programs do not meet your needs. This problem can be easily avoided if both you and the vendor understand your requirements. There is less chance of this occuring with "canned software" as opposed to custom. Even with canned software you should list the information you would like to have with your dental system. An example of what should be in a dental system and how to determine your needs is located in the Specialty Feature "Computers and the Dentist" of the July/84 issue of this Journal.

4. Training. Good training is essential. A program may work well, but if you do not fully understand its capabilities then obvious problems can result. As training is important, do not try to cut short the training process by wanting the system "on-line" the day after you buy it. The training should be governed according to the progress of the student.

Now that we have reviewed some of the pros and cons of a computer system lets look at the software in more detail. There are basically two ways to obtain dental software for your practice. These include buying a packaged dental system or getting a package custom designed. The latter is the most expensive route.

Packaged Software

There are many benefits in purchasing a packaged system. The most important benefit is that it is the most cost effective method of computerizing your practice. There are many packages on the market. Some are adapted American systems, and others are designed for specific hardware. In both cases make sure that both the hardware and the software is easily supported, because without support you are definitely asking for trouble. There are many other benefits to buying packaged systems, some of which include:

1. the package was designed specifically for dentists.
2. The software has been tested and installed in other dental offices.
3. The package is a turn-key solution. By this we mean that the system should include full documentation, hardware, software and complete training and installation of both hardware and software.

As much as buying a package is your best bet, there are a few drawbacks. The first is simply that the program may not satisfy all your needs. That is, packages are designed for the mass market and are designed as generically as possible. If you are that radically different from the majority of dentists in Canada, then perhaps a custom package is best suited to your needs.

Custom programming can be the ultimate solution for your needs. However, the cost associated with a custom application can be 10 times the packaged price for virtually the same program. As a note to custom programming; beware of programmers who say that they could give you a complete system for a fraction of the cost of a packaged system. Custom rates at many of the reputable programming houses range from $75.00 to $150.00 per hour. This may not sound like a lot of money, however, a complete dental system could take up to a year of development and programming time.

In conclusion there are many good packaged programs on the market. Whether you retain a consultant or investigate the market yourself, make sure that the programming will satisfy your needs and that the support for both hardware and software is provided.

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THE DENTIST, THE BIOPSY, AND THE LAW

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ABSTRACT

The legal attitude toward biopsies is examined and illustrated with a dramatic malpractice suit. An oral surgeon, by failing to biopsy a suspicious lesion, delayed definitive diagnosis of the malignancy, resulting in the patient's premature death. The oral surgeon was found guilty of negligence. Prompt biopsy of suspicious oral lesions is encouraged and the broader implications of failure to submit excised tissue for pathologic examination is discussed.

DISCUSSION

Oral biopsy procedures have been thoroughly reviewed elsewhere.[1-5] Similarly, a number of books are available on the legal aspects of health care delivery in Canada.[6,7] In this paper, the malpractice suit of *O** v. *S*[8] is presented to illustrate the legal argument for prompt biopsy of suspicious oral lesions.

CASE HISTORY

On May 10, 1967, Mrs. C was referred to Dr. S, an oral surgeon, regarding a painful mandibular right first molar (4.6). After examining the patient, a focal infective process was suspected. Radiographs revealed "a partial destruction of bone underlying this tooth," leading to a diagnosis of "pyorrhea-a periodontal abscess" and extraction of the tooth.

The patient's next appointment was on May 26, when Dr. S observed that the extraction socket was not healing. On June 9, there was still no healing and the patient complained of intermittent bleeding from friable tissue within the socket. An underlying leukemia was ruled out by blood tests ordered by Dr. S. The patient continued to see the oral surgeon periodically with the same complaint until August 22 when, the now mobile, 4.5 was extracted. This extraction site manifested the same abnormal symptoms and signs as the 4.6 area, and furthermore, the patient complained of general malaise. More blood tests and a bone marrow biopsy (remote from the lesion) were again negative. Dr. S now observed spontaneous hemorrhage from the surgical site and performed a cytologic smear of the area.

On August 23, the oral surgeon discussed the patient's condition with a pathologist and a radiologist. The pathologist advised Dr. S that the cytologic smear was negative for atypical cells but that one could not rule out malignancy without a biopsy. Dr. S, however, was still convinced that the underlying disease process was infective in nature. The three doctors thus arrived at a diagnosis of chronic osteomyelitis, a condition which Dr. S felt would be aggravated by biopsy. The oral surgeon, therefore, instituted antibiotic therapy.

During the next month, the patient saw Dr. S on several occasions, twice for serious hemorrhage, once requiring hospitalization.

On September 26, the oral surgeon observed what he considered clinically to be a malignant tumour involving the gingiva in the 4.6, 4.5 area. Upon his referral, the patient was admitted to hospital, on October 4, 1967, where her oral lesion was promptly biopsied and diagnosed as poorly differentiated squamous cell carcinoma. Despite radical surgery and radiotherapy, she died on August 22, 1968.

LEGAL ACTION

Action was brought by the administrator of the deceased's estate against the oral surgeon, based on negligence in failing to properly diagnose. At the trial level, in the United States District Court for the Northern District of Iowa, judgment was entered against the oral surgeon and the jury awarded damages in the amount of $50,000, based on a finding of negligence. The oral surgeon appealed that decision to the United States Court of Appeals. However, on June 9, 1971, the decision of the trial court was affirmed.

The trial court's decision, which was later affirmed by the Court of Appeal, concluded that the evidence was sufficient to find the defendant, Dr. S, negligent in failing to perform a biopsy to diagnose the malignancy. The estate of Mrs. C was awarded damages in the amount of $50,000, including com-

*Administrator of the deceased Mrs. C's estate

pensation for the unnecessary "treatment" she received prior to the correct diagnosis being made. The award was based on the evidence that there was a 30 per cent survival rate for this type of cancer, and that this chance was felt to be considerably improved, the earlier the cancer was diagnosed. Evidence further indicated that the patient's condition deteriorated during the time that the cancer was undetected. Had the malignancy been treated earlier, the patient would probably have survived longer, with less discomfort, and less serious and radical treatment would probably have been required.

The following discussion is based on the reported decision of the appeal court.

DISCUSSION

Analysis of this unfortunate case history reveals a number of diagnostic errors. By studying them from a lawyer's and pathologist's perspective, specific as well as general practical guidelines for prevention of similar tragedies are offered.

The patient initially presented with pain, tooth mobility and radiographic evidence of bone destruction. Statistically, a very likely clinical diagnosis was periodontal abscess. Had the oral surgeon attempted to confirm this by periodontal probing, he would not have found deep periodontal pocketing with purulence, as this is not a feature of carcinoma. It is essential, therefore, to confirm and document, in the patient's chart, results of clinical investigations which support a given diagnosis. Should the essential feature of a disease be absent, the next most likely disease must be selected (from one's list of differential diagnoses) as the new working diagnosis. Documentation not only encourages a more systematic approach to diagnosis but is also a legal necessity.

When the extraction socket failed to heal, Dr. S's next working diagnosis became leukemia. This was ruled out by blood tests and a bone marrow biopsy (probably from the iliac crest or sternum). As a general rule, unless significant supporting systemic manifestations are evident, useful information about a focal lesion is much more likely to be obtained through a biopsy of the lesion than by searching for some specific systemic etiology.

The court was told by an expert witness that *if Dr. S suspected cancer, he should have done a biopsy; and even if he didn't suspect cancer, he should have*, as there were sufficient signs and symptoms, and failure to do the biopsy was negligent (emphasis added).

Dr. S did perform a cytologic smear of the tissue within the socket. The only strong indication for oral cytology, however, is for confirming a suspected fungal infection. Due to the significant proportion of false negatives and false positives obtained when this technique is used to diagnose suspected cancers, a biopsy remains essential, regardless of the outcome of the cytologic test. When an oral lesion requires investigation to rule out malignancy, cytology is a waste of valuable time; expert testimony at the trial indicated that cytology was an inappropriate diagnostic tool in this case. Indeed, Mrs. C's cytology report was negative for malignancy, but no biopsy was performed at that time.

The next working diagnosis was osteomyelitis. It should be noted that although osteomyelitis and a malignant neoplasm within bone may appear somewhat similar radiographically, osteomyelitis generally has a local etiology. Again this etiology was probably not confirmed and documented at the initial appointment, as infection is not a primary feature of cancer. Neither did Dr. S confirm his diagnosis of osteomyelitis by biopsy.

Dr. S's argument for not performing a biopsy was fear of spreading infection from the osteomyelitis. The court, however, was of the opinion that no definitive diagnosis of osteomyelitis had been established. Furthermore, an expert witness stated that when malignancy is, or should be suspected, fear of spreading infection is not adequate reason for failing to obtain a definitive diagnosis by way of biopsy.

The court's attitude toward "treatment" is most illuminating. Tooth extraction, in this case, was regarded not as treatment, but mere alleviation of symptoms since no prior diagnosis had been made. Therapy, in the absence of an accurate diagnosis, is unlikely to effect a cure. Failure to establish a definitive diagnosis therefore, may result in lack of treatment, in legal as well as biologic terms.

The court also faulted Dr. S. for not instituting a therapeutic trial of antibiotics when he initially suspected osteomyelitis. Lack of response to this diagnostic procedure should have hastened the establishment of the correct diagnosis.

In effect, the patient's condition was never definitively diagnosed by the oral surgeon. The court ruled that Dr. S had been negligent, on the basis that *malpractice may involve lack of skill or care in diagnosis* as well as treatment. It can be concluded from the dismission of the action against the two physicians (presumably the radiologist and the pathologist) and from the reported decision, that the liability was based not on the rendering of an incorrect diagnosis *per se*, but on the failure to use proper diagnostic procedures in the first instance.

This case clearly demonstrates that a dentist is negligent if he fails to utilize the diagnostic technique deemed appropriate for a given clinical situation. Where the failure causes additional pain and suffering and lessened chances of survival, the dentist will be liable to the patient or the estate of a deceased patient for damages. Although expert evidence was used to establish negligence in this case, the reported decision indicates that expert opinion is not necessary "if the physician's lack of care is so obvious as to be within the comprehension of the layman's common knowledge".[8] This supports the proposition advanced by the authors that even if the practice of taking biopsies is not currently routine within the profession, if the layman could perceive that it should be so, then expert evidence will not be required to establish whether the practice is part of the standard of care expected within the profession, and thus a finding of negligence may result if there is a breach of this standard of care.

Similar cases seldom come to court, but, this by no means reflects the rarity of failure to perform a biopsy, with subsequent delay in diagnosis and proper treatment. In a retrospective study of 779 patients with oral squamous cell carcinoma, Shafer[9] showed that at least 115 (14.8 per cent) of the cases were initially mismanaged, resulting in significant delay before the diagnostic biopsy was performed.

Not only is there a problem with early recognition of oral cancer, but a significant disparity exists between the frequent surgical excision of tissue by dentists and the low percentage of dentists who actually submit tissue to oral pathology diagnostic laboratories.[10] Without histopathologic examination and definitive diagnosis, the excision of tissue, like the extractions in *O v. S*,[8] may be regarded by the courts as only alleviation of symptoms, not treatment.

Although there are no provincial statutes or regulations requiring pathologic examination of human tissue when excised in private practice, clear and specific guidelines exist for hospitals in most of the Canadian provinces. Most provinces require that tissue removed during an operation be examined by a pathologist. The following is an example from the province of Nova Scotia:[11]

> **11.(1)** A physician shall not destroy tissues removed from a patient during an operation or curettage.
>
> **(2)** All tissues removed from a patient during an operation or a curettage shall be sent, together with a short history of the case and a statement of the findings of the operation or curettage, to a laboratory where a pathologist shall carry out a gross examination of the tissue. A histological examination shall be carried out upon a request of the physician or if the gross examination suggests a pathological condition which can be confirmed

only by a histological examination. A laboratory report on every tissue examination conducted by a pathologist shall be sent to the hospital in which the operation or curettage to remove the tissue took place.

Many provinces exclude certain excised tissues, notably teeth, from this requirement. The basis for omitting these tissues is the presumption that the definitive diagnosis is obtainable on clinical grounds and that gross and microscopic examination of the surgical specimen by a pathologist is of no additional value in arriving at the correct diagnosis.

As the present case clearly demonstrates, even lesions which superficially resemble common sequelae of periodontal (or pulpal) disease demand careful diagnosis. A prudent general policy toward oral lesions and biopsies is therefore suggested.

Any oral lesion, for which the clinician does not have definitive clinical diagnosis, is potentially a malignancy. As such, the patient should either be promptly referred to an appropriate specialist (e.g. oral pathologist or oral and maxillofacial surgeon), or the biopsy should be promptly performed by the primary clinician. Also, all excised tissue must be submitted for examination by a pathologist (preferably an oral pathologist), unless again a definitive diagnosis is possible based on clinical criteria alone.

CONCLUSION

The dentist has a professional, ethical and, as illustrated, legal responsibility to properly diagnose and treat oral lesions. Failure to detect and biopsy suspicious lesions at an early stage was viewed by the court in Iowa as malpractice.

Although there do not appear to be any similar cases involving dentists in Canada, it is likely that the same standards of health care apply in this country. Negligence can also exist in Canada on the basis of failure to diagnose, and the subsequent delay of appropriate treatment. Although expert testimony is the usual method by which the appropriate standard of care is established, as indicated earlier, it is not always necessary. The case presented would supply persuasive authority that biopsies are necessary diagnostic procedures when malignancy is suspected, or the symptoms and signs are such that malignancy should be suspected.

Gross discrepancies between the numbers of surgical procedures and numbers of biopsies submitted to oral pathologists continue. Despite the fact that this practice may be perceived to be the accepted standard with respect to diagnosis by oral biopsy – or rather, lack of this practice – this case provides cogent authority for the fact that failure to submit tissue for biopsy may be negligent practice, where cancer is, or should be suspected. The case further supports the proposition that expert evidence is not required to show what is accepted practice within the profession to establish the requisite standard of care. If the general population can determine that the procedure *should* be standard within the profession, negligence may be found in the absence of general use of a procedure such as oral biopsy.

Failure by the profession to establish a practice judged by the general population, and as found in cases such as this to be prudent practice, may bring about government legislation imposing mandatory laboratory examination of tissue excised in private practice, in order to assure that all lesions are biopsied, thus removing the decision-making process from private practitioners.

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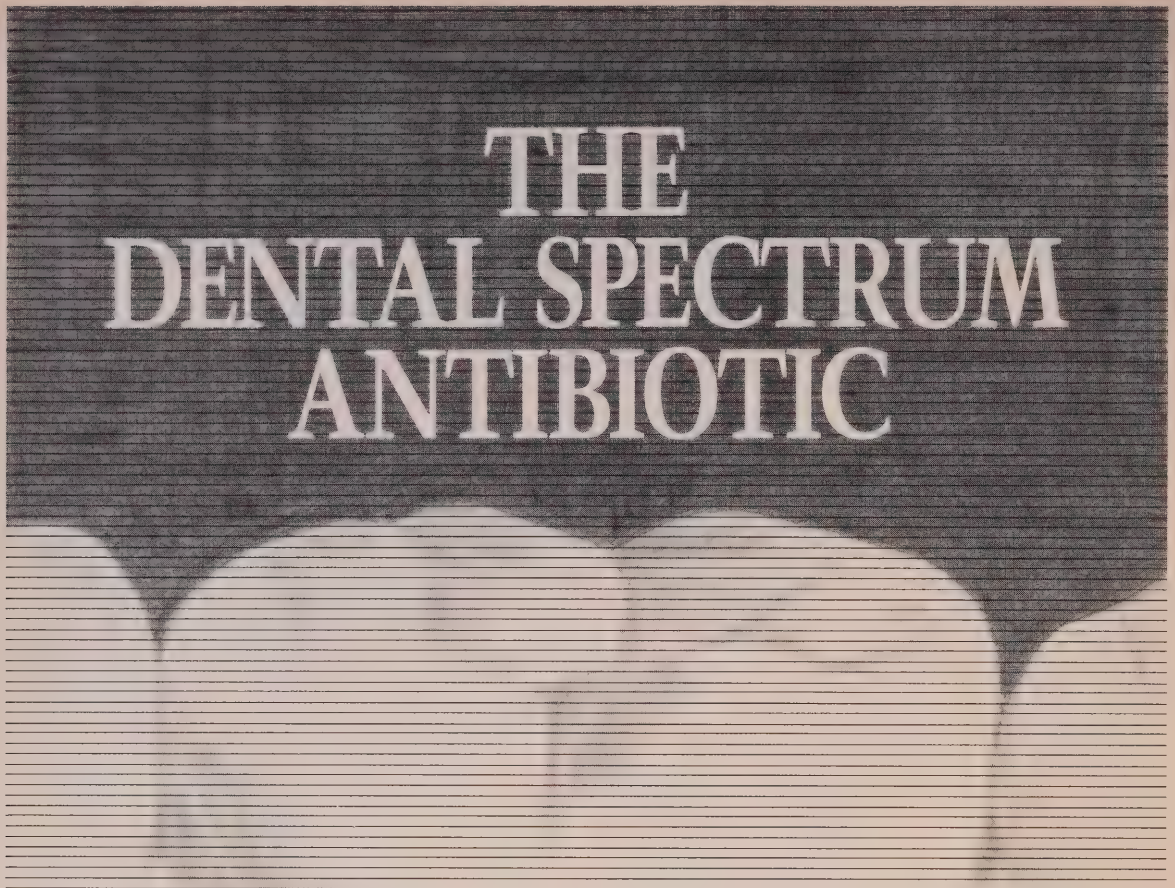

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COMMUNITY RESPONSES TO THE DISABLED AND THE DENTAL PROFESSION'S RESPONSIBILITY

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COMMUNITY RESPONSES TO THE DISABLED

Traditionally some of the attitudes and practices that society had towards the disabled were ones of shame, ignorance and fear. These in turn often led to practices of ridicule, neglect and even inhumane acts. In a society governed so strongly by aesthetics, mental and physical abilities, these handicapped persons were often abandoned to fend for themselves or placed in 'asylums', and even worse, community jails, to say nothing of those who were made to perform regularly at circus side-shows for public amusement.

Up to the early years of the 19th century no attempt had been made to educate the retarded, or to habilitate the physically disabled and, as a matter of interest, several of the latter became national and international figures through lives of piracy or other dishonourable acts in order to gain self-recognition. No distinction was made between the degree of severity of an affliction or its aetiological basis, and consequently the mild and severely handicapped were treated with similar disdain. Then, towards the middle of the 19th century a French physician, J.M.G. Itard, made the first scientific attempt to educate a retarded child, "the wild boy of Aveyron." His efforts were soon to be followed by E.O. Sequin who undertook a career centered on the systematic education of mentally retarded persons. In 1848 Seguin emigrated to the United States and established what is thought to be the first school for education of the retarded. In his new homeland he became a leader in this field and he was to be the catalyst for a new philosophy with regards to the rights of the handicapped. From a belief that nothing could be accomplished for the handicapped to the one that most of them could be educated and become self-sufficient in the community, a new era of optimism evolved. However, the hopes

Norman Levine

and aspirations of those involved in this new movement were soon to be diminished by the realization that just as in the normal society, degrees of potential within the population could be found within the handicapped as well. Hence, the small 'temporary' residences encompassing all aspects of social training and designed to educate the handicapped for society, failed, and the residents were returned to their homes where they would be cared for by their parents or families throughout life, only to be left in later years after the death of the people who took care of them, to be free in a society for which they were unprepared. This 'freedom' aspect was seen to pose new problems to society, and being ignorant at that time to the causes of physical and mental disablement, these conditions were generally believed to be contagious. Because of this misconception, and in order to prevent mass hysteria from fear of 'catching the disease' the construction of large institutions commenced so that affected persons could be housed in isolation from the rest of society. This attitude in the later part of the 19th century was to give rise to literally hundreds of institutions for the handicapped – the mentally retarded, the blind, deaf and the physically and medically unfit. It was to be society's philanthropic gesture to all of these people, giving recognition to their disabilities and saying to them, 'we realize you require lifetime support and we are doing this for your benefit.' The concept of institutionalization of the handicapped at this time gave rise to many adverse conditions which were to remain with society until the present era, i.e. (i) isolation, (ii) expansion of the facilities as part of the community's responsibility, (iii) mass care for purposes of economy.

One need not dwell on the injustices which were perpetrated by all societies through ignorance and fear over the next half century, for it would do little to elevate our self-esteem. Suffice it to say that we began to to recognize our inhumane attitudes as a society approximately two decades ago and corrective steps were taken so that the injustices would not be perpetuated. What then has been the cause of this almost overwhelming shift in attitude which has given rise to the three most universal words relative to the handicapped, i.e. 'Decentralization', 'Normalization' and 'Integration'.

I personally believe that the social revolution of the past quarter century has done more to remove the stigma of being handicapped or being parents of handicapped than all the preceding years. At this time people are looking at the problems from an educated base, with sound principles and a forum for discussion and trial. Never before in civilized society has so much been written about or acted out on screen and/or stage with respect to people with mental, physical or medical problems. Some of this sudden positive change in attitude must surely be attributed to the horrors of war; however, on the other hand, one would like to believe that as a society we have

advanced to a level of understanding that all persons are neither born perfect nor equal, and it is a responsibility to provide adequate facilities in every respect so that everyone may receive the quality of total care that will enable each of us to live a life of self-worth and dignity.

We have come to realise that handicapped persons are found in every race and creed, from every social, educational and economic background and that these people cannot be kept in isolation but must be provided with the opportunity to develop to their optimal potential. We have an obligation to the physically impaired, the mentally retarded, the deaf, blind, the emotionally disturbed, perceptually handicapped and those with a variety of medical problems.

The acceptance by society of the foregoing hypothesis has enormous implications and will be discussed under the following topics:

1. Decentralization

If we are to effectively transfer the handicapped from the institutions to the community, the thrust of this change must be directed to the following areas:

(a) The community must be ready to provide guardianship and protective services individually and collectively. This will range from direct family supervision to small group home residences or a combination of both.

(b) Community resources must include counselling and all other adjunctive services heretofore provided by the institutions. These must be both individual and group specific in nature.

(c) The community must provide employment opportunities; manpower and welfare policies must be developed so as to allow the handicapped to become independent and integrated with the work force of the general population. These will be through the private sector or government sponsored and subsidized workshop programs.

(d) There must be total acceptance of a thorough co-ordinated program within the community which will employ local, municipal, provincial and federal resources.

Each of the foregoing is important in its own sphere, however, what is of paramount importance is that they *all* receive equal emphasis and that a change will encompass *all* of them.

2. Normalization

This concept of human management was first introduced by Bank-Mikkelsen, Denmark, in the late sixties and was to be the basis for an entirely new international ideology for the treatment of the mentally retarded. It was defined by Nirje[2,3,4] as follows: "making available to the mentally retarded patterns and conditions of everyday life which are as close as possible to the norms and patterns of the mainstream of society." Hence the handicapped person should receive assistance to the extent possible within the context of their families and the communities in which they live or to which they will return, including the schools they will attend, to enable them to achieve the greatest degree of participation possible in life. The community must maintain for them the maximum degree of normalcy in all of their experiences, to allow for a healthy and happy development as a **total** person. So often we as a society have both consciously and perhaps unconsciously erected barriers which have interfered with the normalization process. Some of these have been relatively easy to correct, particularly the physical ones. The more difficult obstacles dealing with exclusion, segregation, prejudice, to mention a few, are more difficult to erase; however, and only after mass public education programs will we make progress in these areas. To this end I have already mentioned the increased media exposure of the handicapped and I feel that this type of publicity in addition to formal educational programs will aid substantially the objectives and aspirations of the handicapped for recognition, both individually and collectively.

3. Integration

Without integration, namely the acceptance of the handicapped into every aspect of society with which they will feel comfortable, the decentralization and normalization programs will fail, for if a handicapped person is capable he must be given the same opportunities as the able-minded and the able-bodied. There are and must be more incentive programs for living practices, not out of pity, but out of knowledge that an individual is capable and willing to perform a particular task. This is particularly true for the adult but in order to reach that stage there must be opportunities for development of skills, mental as well as physical, through an integrated social and educational system. The advent of our highly technical resources has made possible advanced educational systems for the handicapped that twenty years ago were in the realm of science fiction. Electronic typewriters, tape recorders and computers, to mention just a few items, have made education and employment a reality for many handicapped persons.

Having discussed decentralization, normalization and integration in a general way, let us now examine more closely the specific areas within the community that must be accessible to the handicapped.[1,5,6]

- Spiritual services; these must be available for all individuals. Pastoral guidance and an understanding of one's true or acquired religion must be given.
- Diagnosis and counselling services through social service agencies, Children's Aid Societies, mental health clinics and physicians, to include areas such as home care, behaviour guidance and genetics.
- Development care services, for preschool children and nursery facilities.
- Special education programs for the educable, trainable and severely handicapped as well as the profoundly retarded. It is no longer acceptable to have one program for all levels of handicapped people.
- Continuing adult education services; these will be community oriented.
- Vocational rehabilitation services; manpower development such as training, assessment, placement and counselling, resulting in long-term employment in the community or sheltered workshops with special arrangements with employers (grants, subsidies, etc.).
- Daily activity for handicapped adults; general recreation as well as activity centres for severely and profoundly retarded adults.
- Protective services to deal with legal problems, social problems, money management, estate management.
- A complete range of medical and dental services must be made available.
- Financial assistance; allowance to adults, support to the family of the retarded child (this should be calculated as a percentage of the average cost saving per capita of the institutional care cost).
- Preventive services; pre- and post-natal care and diagnosis (genetic counselling, abortion if indicated and desired after amniocentesis).
- Case finding services; high risk registry, educational guidance and identification of cognitive and/or perceptual problems, routine health examinations through individual practitioners and agencies, special treatment and training facilities, nursing homes or residential treatment and training facilities.
- Residential care within the community; provision for small group homes, residences or apartments to encourage those capable of independent living to do so. These must be located in the community and **not** peripheral to it.

The foregoing represents the ultimate goals of the normalization and integration programs in Canada and the United States.[3,7,8,9,10,11]

Other countries are also changing legislation to meet similar objectives, for example, in Holland the integration program that had developed up to the early part of the last decade, was only one of partial integration since services for the retarded, and in fact, communities for the retarded tended to maintain the isolation concept. However, after 1975, it became obvious that only through a program of re-organization in line

with the current concepts would true integration be realized[12].

Sweden, a leader in the normalization and integration concept, through government action decreed a New Act on Provisions for Mentally Retarded Persons in July 1968[13]. It is very specific in its legislation which guarantees assistance for all retarded persons and yet it has sufficient flexibility to allow for individual needs.

Similar statutes were passed in England by Command of Her Majesty in June of 1971 for the State of Wales[14] and finally, in December of that same year the United Nations' General Assembly passed its Declaration on the Rights of Mentally Retarded Persons[15]

In but ten short years, and what must have seemed like an eternity for those involved, much had been accomplished by way of legislation which gave recognition to the community needs of the disabled. In the majority of countries, changes occurred in educational programs to allow for integration, transportation systems and driving rules were modified to allow disabled people to become mobile and travel; public building codes were altered to allow for accessibility; prenatal educational clinics to inform prospective parents as to the effect of diet, drugs and alcohol on the unborn child as well as more carefully executed birth procedures during delivery have significantly reduced the number of congenital defects, e.g. cerebral palsy.

Due to advances in medical science, those disabled children that are born today are given a much more humane role in life because of awareness and educational programs which have had a pronounced positive effect on public attitudes.

The Role of the Dental Profession

Finally, I wish to elaborate in some detail the role of the dental profession in the community relative to the unmet dental needs of the handicapped population.

The Problem

Dental treatment is perhaps the most singular unmet health need of the handicapped. While there is now an abundance of dental literature on the subject of dental treatment for various handicapped conditions, this, for the most part has been through the efforts of a 'few' participants at local, national and international levels.

It has been stated that between 1 and 3 per cent of the population is handicapped. Many of these individuals have never been to the dentist and so there is a real problem that is not singular in nature but a complicated one by many aspects, some of which I now list[16].

1. Dentists are reluctant to treat the handicapped in their private offices.
2. Dentists have not been educated to handle and manage the handicapped as part of their dental education.
3. There is a lack of factual information of the dental needs of the handicapped.
4. Dentistry was and still is in many areas a low priority health service; therefore, dental practitioners have not been extensively involved in the community health planning team.
5. Parents and guardians of handicapped children are more concerned with the primary problem and hence have been apathetic about dental care.
6. The philosophy for comprehensive preventive dental care has not been sufficiently ingrained in schools, homes or professional offices.
7. There is a lack of a co-ordinated effort between all members of the health discipline group for *total* health care.
8. Cost has always been used as a factor for lack of treatment.

Any or all of the foregoing aspects may have been circumstantial but institutionalization of both the physically and mentally handicapped persons for their entire lives certainly removed from society the moral and ethical obligation for total care. Thus, it also obliterated the significance of the dental problems. Institutions sometimes did provide some degree of care and some dentists did look after 'crippled' or 'retarded' kids, but for the most part there was a void.

This then brings us to the present decade, one in which the public has much more awareness, and also demands better dental care for the handicapped. In the wake of new developments towards normalization, decentralization of institutionalized persons and integration into society, the dental profession continues to face new challenges that require us to meet not only as a profession but also as individuals.

Before I discuss possible solutions to the problems enumerated, I would like to outline briefly what the major areas of dental concern are, in children as well as in adults.[17]

CHILDREN

1. Patient Control

With some understanding of the medical problems minimal alterations will be needed in one's methods.[18] The first consideration, of course, is some greater feeling of empathy with the parents. They must be made to feel at ease with your handling of the child since many parents become very overprotective.

As far as the child is concerned, he is treated as an individual with related problems who usually requires more firmness in handling, although this is done in a strict but gentle manner. Do not force the child; often even the initial examination must be done in stages, a child eight years of age may only have the development of a two- or three-year old.

2. Caries

With regard to caries, first and foremost, diet and oral hygiene must be stressed. Often one is confronted with a three- or four-year old handicapped youngster with rampant decay. Ideally, I believe that all extensive work for very young mentally handicapped children should be done in a hospital with a general anaesthetic, particularly if management is a problem.

Having completed this part of treatment the patient is integrated into the routine office program of prevention. In this way initial visits to the dental office are not traumatic and, therefore, acceptable. With other handicapped youngsters of the same age group, except in extreme cases of management, the object is to teach the patient simultaneously with the dental procedure. All the requirements of sound restorative practice should and can be employed, just as they would be for other children in the practice. It is the parents' responsibility to bring the child to the dental office, and above all, to co-operate with the dental team in the delivery of dental treatment.

3. Gingival Disorders

The aetiology of most gingival disorders in these children is initiated by poor oral hygiene and/or by the effect of drugs used in their general treatment, such as sodium dilantin. Although gingival surgery may be indicated in extreme cases, it cannot and should not be carried out unless there is a firmly established program for optimal oral hygiene. In some patients the electric tooth brush is a valuable aid. In drug-induced gingival conditions, sometimes in consultation with the physician, other drug alternates may be used that have minimal effect on the gingival tissue. An example of this is Mysoline instead of sodium dilantin as an anticonvulsant.

4. Trauma

Because muscle co-ordination of many handicapped children is poor, they are prone to falling and fracturing their anterior teeth. The normal practice of root canal therapy, if necessary, and of pin or crown restoration should be employed in order to preserve these injured teeth. Although a fixed replacement prosthesis is a possibility, in many cases this is not practical and if a removable prosthetic appliance is considered, the level of patient co-operation may not tolerate the denture. Hence in these cases every effort should be made to preserve the natural tooth or teeth. The fore-

going applies to the permanent dentition. In the primary dentition the same guidelines used for trauma in normal children may be followed, however, because of the co-operation factor, extraction procedures can be considered.

5. Orthodontics

Many handicapped children have orthodontic problems because of skeletal or muscle abnormalities; habits (the most common being mouth-breathing and tongue-thrusting, which are physiological habits as opposed to the usual thumb or finger sucking that I refer to as psychological or environmental); tooth-size/arch-size discrepancy including congenitally missing teeth; abnormal exfoliation and eruption patterns of primary and permanent teeth.

Obviously the individual's ability to co-operate is important in the treatment of severe skeletal malocclusion. Hence many of these conditions go untreated. However, many compromises can be achieved in the area of guiding the developing occlusion for children with tooth-size/arch-size disharmony or abnormal exfoliation and eruption patterns. Often a well-timed extraction program will produce an acceptable occlusion without any other therapy or with the additional use of a very simple appliance. For this reason it is necessary to evaluate the dental development at an early stage so that a long-range program can be formulated and explained to the parents.

ADULTS

1. Patient Management

In the adult, patient management is often more difficult and necessitates the use of general anaesthetics.

2. Caries

Sometimes the sheer volume of untreated caries is discouraging. However, every effort within reason must be made to preserve the dentition since it may be impossible for the handicapped patient to wear a prosthesis.

3. Oral Hygiene and Gingival Disease

The result of poor oral hygiene manifests itself as a severe gingivitis and periodontitis which, when untreated, results in premature loss of natural teeth. For the adult who is looking toward social integration this then becomes a liability in terms of appearance and acceptability.

THE SOLUTION

While no single program can effectively resolve a problem that has evolved over many years, nevertheless, the following recommendations will help to not only rectify the present problems but also prevent their perpetuation.

1. Education[19,20]

Prior to and throughout the last decade only a few dental schools offered any curricular subjects or clinical exposure on the physically and mentally disabled. Those that did, offered it in an unofficial way through the courtesy of interested and involved members of the staff. In this decade, every dental school worthy of national and certainly international recognition should have formal lectures and clinics on dental care of the physically and mentally disabled at the undergraduate level. I was once told that this was the domain of the specialist, but throughout the world there are millions of affected persons and only comparatively few dental specialists. Hence, the properly trained and motivated general practitioner must be held responsible for the major role in delivery of dental service to the handicapped person. Post-graduate programs in dentistry for children must have both a clinical and didactic component in dental care for the handicapped in order to receive accreditation at a national and international level.

2. Continuing Education Programs

Continuing education programs for the upgrading of dental practitioners and auxiliary personnel must be available on an annual basis. Survey of dentists has certainly revealed their interest in this field but because of a deficiency in their undergraduate training there is a reluctance on their part to get involved. Therefore, it is the responsibility of the university and the profession to augment their knowledge in this area.[20,21]

3. Literature

Development of literature for both the lay public and allied professions in the health and science disciplines on the importance of optimum dental health for the handicapped should continue to be encouraged. This should be national and international in scope and distribution. It is interesting to note that the number of articles written in this field has more than tripled in the last five years of this quarter century as compared to the first five years. An interesting example pertaining to the lack of communication between professions was illustrated by my personal involvement in a conference on mental deficiencies. It was the first time in 100 years that a dental practitioner appeared on such a program, although almost every other discipline in the field of health care had been involved previously.

4. Programme Development

Every institution, residence or school, large or small, should have dental health programs that should be staff, resident and parent-oriented. To be successful all three groups must be involved. I believe that as professionals we should be involved in such organizations to ensure that all levels of health and welfare are looked after.

The dental profession must have input into the standards of dental programs of institutions in terms of staff, institution design, diet counselling, dental care and dental education. Salaries and benefits paid to those working in institutions should be reasonably well equated to private practice or other similar vocations to ensure the selection of the best possible personnel.

Government funding should be acquired from national, provincial and state levels so that in spite of any financial cutbacks this heretofore second-class citizen will get his equal rights and opportunities within the limits of his capabilities, and the foregoing programs can be developed. To ensure the spending of funds in the most equitable way

TABLE I

Number of surveys to each group

GROUPS		SENT		RETURNED	
		NUMBER	%	NUMBER	%
1. Dentists		3600	100	1556	43.2
2. Ontario Hospitals		235	100	194	82.6
3. Gains Programme (Clients)		9000	20	4330	48.1
4. Parents and Guardians of M.R. and P.H. Children:					
Day Nursery	900				
Crippled Children	2000				
Ministry of Education	1500				
TOTAL	4400	4400	20	1728	39.3
5. Homes for Special Care and	500				
Approved Homes	300				
TOTAL	800	800	100	292	36.5
6. Public Health Nurses		1300	100	565	43.5
TOTAL		19,335		8,665	44.8

possible, research programs must be initiated to ascertain problem requirements and solutions. Only in this way can the priorities be properly perceived.

The foregoing list of requirements illustrates the enormity of the challenge that our community has undertaken when it talks about a just society for all; how we meet this challenge may well be a measure of our maturity as a modern society.

In an attempt to delineate the problems dealing with dental care for the handicapped, a study was conducted in the Province of Ontario*; results of that study form the basis of the following discussion.

Questionnaires were distributed to groups of people in the Province of Ontario involved in some way with the care of disabled persons; ie.:

1. Dental practitioners.
2. Parents of mentally retarded and physically handicapped.
3. Clients (persons living in group homes or small residences).
4. Hospitals in Ontario.
5. Field workers.
6. Public Health Nurses.

(See **Table I**)

Based on the information collected from the survey and the subsequent analysis the following observations were made,

1. Dentists: the dental profession at large is willing to treat the handicapped when they are asked to do so, and in their own offices. Of the respondents, 1,247 indicated that they would carry out treatment in their offices, 343 would prefer hospitals and 105 other acceptable settings (clinics, etc.). The majority stated that they would appreciate additional training in the area of dental care for the handicapped and were willing to attend courses. The scope of the treatment carried out is shown in **Table II**.

*Task Force Report, Community Dental Services for the Mentally Retarded and Physically Handicapped in Ontario, Govt. of Ontario Task Force, Dr. Levine, Chairman, 1977.[21]

2. Parents: of the respondents almost three times as many came from the cities as compared to towns and villages. The largest group responding were parents of children in the elementary school age, i.e. 6-13 years; this is an indication that these parents of young children are becoming more aware of dental needs in terms of total health care, and 76 per cent of parents indicated that they had a family dentist whom they saw on a regular basis. Cost was certainly a factor in why respondents do not have a family dentist, although not the only one, since parents indicated they had never sought dental care.

3. Clients: the persons surveyed were over 18 years of age and while cost was a factor in them not receiving dental care, a high percentage (25 per cent) indicated that they had not asked any dentist for service. Of those that did seek service, only 3.4 per cent stated that the dentist had been unable to provide service. Of all the clients surveyed, 32 per cent indicated that they saw a dentist on a regular basis; while over 40 per cent indicated they had not seen a dentist in 18 months, except in an emergency. Of those treated 63 per cent were seen in the dentist's office and only 13 per cent required treatment in the hospital.

4. Hospitals: of 194 hospitals surveyed 83 per cent indicated they were capable of providing some dental services to the public, however, less than 20 per cent were able to provide comprehensive care for a full range of dental treatment. The survey shows the need for an expanded dental program through proper facilities rather than just an oral surgery facility.

5. Field Workers: the survey answered by the field workers who attended group homes and small residences indicated that only 50 per cent had taken the responsibility for arranging dental examinations for their clients. In 22 per cent of the homes, visits were arranged by the field workers, 18 per cent by the attending physician and 10 per cent by administrators. There was a definite lack of concern in attending to the dental needs of the clients and that only when an emergency arises dental treatment is sought. Since group homes primarily deal with an adult population, the regulations governing them must include guidelines insuring adequate dental care for the residents. It must be the field workers' responsibility to implement these regulations.

6. Public Health Nurses: 1500 public health nurses employed in 44 provincial health units were surveyed and 81 per cent of those responding indicated contact with families with handicapped persons. It is evident from the survey that in their training more instruction must be given in the areas pertaining to dental health and oral hygiene, as well as information regarding funding agencies and treatment resources. In doing this, more handicapped persons could be reached on a personal basis and motivated to seek dental care either independently or through their families.

In summary, what this survey attempted to do on a provincial scale, was to investigate the major areas related to the delivery of dental health care to the disabled so that funds could be distributed effectively and efficiently to areas of need on a priority basis. At this time, a similar follow-up survey is needed to determine what improvements in dental care delivery have been instituted and what are the current needs.

> ". . . we shall always need a tolerant society, able to cope with different types of difficulties, elicited today by the presence of handicapped people and tomorrow by other unpredictable persons or events. Certainly man's progress lies not only in conquering another disease, but also in learning how to treat man with greater respect and tolerance."
>
> (Yvonne Pasternak, as quoted in *Mental Retardation*, July 1977, p. 24).

A portion of the foregoing paper as well as a second paper, "Educational Programmes in Dentistry for the Handicapped

TABLE II

Classification of types of dental services provided for mentally and/or physically handicapped persons during the last 12 months by the 1584 responding dentists by region*

	DENTAL SERVICES									
REGION	Extractions	Restorations	Prophylaxis	Root Canal	X-Rays	Fluorides	Periodontia	Dentures	Other	None
Toronto	179	292	276	62	248	133	98	105	36	120
Central	304	394	358	51	333	206	119	130	24	77
Eastern	121	151	140	25	129	88	40	54	17	41
Northeastern	62	72	51	7	44	28	13	33	4	7
Northwestern	25	30	25	4	23	16	9	12	1	6
Southwestern	136	173	157	21	144	69	46	57	14	35
TOTAL	827	1112	1007	170	921	540	325	391	96	286

*In the Province of Ontario

– Faculty of Dentistry, University of Toronto Model'' – Mount Sinai Hospital Model, were presented at the 12th Annual Congress of the Japanese Society of Dentistry for the Handicapped in Chiba, Japan, in November 1984.

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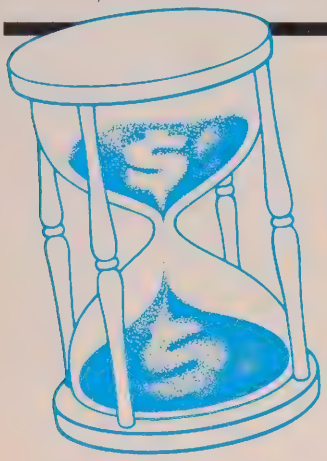

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CANADIAN FUND FOR DENTAL EDUCATION

ORAL HEALTH STATUS AND NEEDS OF THE ELDERLY IN QUEBEC

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SUMMARY

A socio-dental survey was conducted among people aged 65 and over in the province of Quebec, in order to determine their oral health and prosthetic status and the correlation between their perceived and diagnosed needs. The data are based on the participation of 1,822 individuals who agreed to answer a questionnaire and to undergo a clinical examination. A high percentage (72 per cent) of elderly Quebecers are edentulous. The dentate individuals have on average 12.4 teeth, of which 7.7 are sound, 2.4 filled, and 2.3 decayed. Periodontal disease was found in 81 per cent of the dentate population. Among the elderly Quebecers 78.3 per cent are in need of treatment; this holds true regardless of the variables under consideration (place of residence, geographic region, sex, age, education, income); for each variable, 73 to 83 per cent of the elderly population is in need of some kind of treatment.

SOMMAIRE

Une étude épidémiologique a été effectuée chez les personnes de 65 ans et plus du Québec dans le but de déterminer la condition de la santé bucco-dentaire, l'état prothétique et la relation entre les besoins de traitements ressentis et diagnostiqués. Les résultats découlent de la participation de 1,822 personnes qui ont accepté de répondre à un questionnaire et de passer un examen clinique. 72 pourcent des Québécois âgés sont complètement édentés. Ceux qui ne le sont pas comptent en moyenne 12,4 dents dont 7,7 sont exemptes de carie et d'obturation comparativement à 2,4 obturées et 2,3 cariées. Des non-édentés, 81 pourcent souffrent d'affection péridentaire. Environ les trois-quarts des personnes âgées devraient recevoir des soins (78.3 pourcent); ceci est vrai quelle que soit la variable dont il est tenu compte (lieu de résidence, région, sexe, âge, scolarité, revenu) car, pour chacune d'elles, le pourcentage des personnes requérant des traitements divers se situe entre 73 et 83 pourcent.

INTRODUCTION

Despite growing interest in geriatric sociology, medicine and dentistry, little data are available on the dental health and habits of the elderly. To partly remedy this deficiency, a survey was conducted in Quebec to study the oral health and prosthetic status of the population aged 65 and over, to assess their use of dental services, to compare their perceived and diagnosed treatment needs and to test the association between these findings and specific sociodemographic variables such as place of residence, geographic region, sex, age, occupation and income.

MATERIALS AND METHODS

The survey was designed according to the principles laid down in the World Health Organization's "Guide to Oral Health Epidemiological Investigation",[1] using a two-level stratification: first by region – metropolitan, urban, semi-urban and rural, and then by place of residence – private residence, nursing home or hospital.

A probability sample survey of 2,145 persons was taken from 569,375 Quebecers aged 65 and over (according to the 1981 census), 1,822 of whom agreed to answer a questionnaire and undergo a clinical examination, for a response rate of 84.9 per cent. The frame was obtained by randomly selecting 10 local areas representing the different regions of the province. In each of these areas, individuals were randomly selected from electoral lists (for those in private residence), and from nursing home and hospital registers (for those living in institutions). The total number of persons selected in each region was determined in proportion to the number of elderly in the region.

The pool, which over-represented the number of old persons living in home care and hospital institutions in order to gather detailed information on these groups, was then adjusted according to the provincial distribution to yield a sample of individuals representative of the total elderly population in Quebec. Distribution of the general population by place of residence at the time of the survey was 93 per cent in private residences, 4.4 per cent in nursing homes and 2.6 per cent in hospitals. Accordingly, each individual in private residence was weighted by 1.9055118. The weights were, respectively, 0.1347792 and 0.1432835 for those in nursing homes and hospitals. After this weighting procedure, there was no significant difference between the survey population and the general population with regard to age and education; the survey population, however, was more heavily concentrated in the remote areas. **Table I** illustrates the distribution by region and place of residence.

Twelve Community Health Department dentists in the selected regions acted as examiners. After a three-day training session, they were in 80 per cent agreement. Four per cent of the survey population was examined twice; Kendall τ_b tests were done comparing the results of the first and second examinations and there was no significant difference at .01 level.

The examiners questioned the participants at their place of residence on their sociodemographic characteristics, dental prob-

TABLE I

Distribution by region and place of residence

	Private residence	Sample Nursing home	Hospital	Weighted sample
Metropolitan	42.0%	48.8%	51.6%	42.5%
	(373)	(292)	(173)	(774)
Urban	25.6%	25.1%	23.9%	25.6%
	(228)	(150)	(80)	(466)
Semi-urban and rural	32.4%	26.1%	24.5%	31.9%
	(288)	(156)	(82)	(582)
Total = 1822	889	598	335	1822

Number of missing data = 0
$\chi^2 = 13.679$
$\varrho = 0.008$

TABLE II

DMFT index of all the subjects and of subjects with at least one tooth (weighted sample)

Teeth	All the subjects (N = 1822)	Subjects with at least one tooth (N = 511)
D	0.7 (S.D. 1.9)	2.3 (S.D. 2.9)
M	28.5 (S.D. 6.7)	19.6 (S.D. 7.1)
F	0.7 (S.D. 2.6)	2.4 (S.D. 4.4)
DMTF	29.9	24.3

TABLE III

Percentage of subjects with problems of the oral mucosa by type of problem and relationship with dentures

Type of problem	Denture-related	Percentage affected
Stomatitis	yes	9.8 %
	no	1.3 %
Hyperplastic tissue	yes	11.8 %
	no	0.4 %
Ulcers	yes	8.9 %
	no	0.8 %
Leucoplakia	yes	0.0 %
	no	0.2 %
Tumour	yes	0.1 %
	no	0.2 %

TABLE IV

Number and standard deviations of decayed, missing and filled teeth of subjects with at least one tooth according to specific variables (weighted sample)

			Teeth					
	Variables	Number	Decayed	(S.D.)	missing	(S.D.)	Filled	(S.D.)
Residence	Private residence	484	2.30	(2.89)	19.52	(7.16)	2.43	(4.43)
	Nursing home	15	2.43	(3.07)	20.95	(7.24)	2.15	(4.15)
	Hospital	11	3.27	(4.39)	21.72	(7.51)	0.65	(1.69)
	Missing data	(0)						
Region	Metropolitan	215	2.48	(2.97)	18.34	(7.26)	3.70	(5.25)
	Urban	135	1.78	(2.40)	21.39 *	(6.73)	1.24 **	(2.65)
	Semi-urban and rural	162	2.57	(3.24)	19.81	(7.10)	1.57	(3.81)
	Missing data	(0)						
Sex	Male	290	2.62	(3.23)	19.89	(7.25)	1.64 **	(4.03)
	Female	221	1.94	(2.44)	19.33	(7.04)	3.35	(4.65)
	Missing data	(0)						
Age	65-74 yr	349	2.25	(2.97)	19.49	(7.03)	2.28	(4.02)
	75-84	147	2.52	(2.89)	19.43	(7.38)	2.80	(5.30)
	85 +	15	2.11	(2.55)	23.80	(7.44)	0.63	(1.70)
	Missing data	(0)						
Education	0-4 yr	91	2.65	(3.24)	18.90	(8.66)	0.75	(2.12)
	5-7	160	2.50	(3.13)	21.39 **	(5.83)	0.91 **	(2.41)
	8-12	210	2.02	(2.54)	19.26	(7.14)	3.48	(4.97)
	13 +	48	2.47	(3.24)	15.96	(6.58)	5.70	(6.57)
	Missing data	(4)						
Income	$ 0-349	177	2.58	(3.00)	19.99	(6.81)	1.42	(3.35)
	350-499	194	2.38	(2.80)	19.89	(7.24)	2.12 **	(4.21)
	500-999	57	2.28	(2.99)	18.64	(7.37)	4.17	(6.07)
	1,000 +	15	2.26	(3.04)	14.59	(6.40)	6.57	(6.67)
	Missing data	(69)						

* *if* $\varrho \leq 0.05$ (one way anova)
** *if* $\varrho \leq 0.01$ (one way anova)

lems and subjective treatment needs, and then performed an examination, using the WHO criteria, to evaluate both oral health status and need for treatment. The survey took place between July 1980 and January 1981; it was preceded by a pilot study.

RESULTS
ORAL HEALTH CONDITIONS

Teeth

The DMFT index is used to measure caries. This index can be modified for the elderly as suggested by Christensen:[2] "D stands for decayed teeth, and includes all teeth in need of treatment. M stands for missing teeth, i.e. teeth missing either due to caries, periodontal diseases or trauma. F stands for filled teeth, including all types of fillings from the temporary filling to the crown." In this study, however, teeth with temporary fillings have been counted as decayed, as recommended by WHO.

Table II shows that missing teeth account for most of the DMFT index – 28.5 of 29.9 overall and 19.6 of 24.3 for subjects with at least one tooth. Seventy-two per cent of Quebecers aged 65 and over are fully edentulous; 81.8 per cent do not have any single tooth on the upper arch and 73.6 per cent on the lower one.

Dentate Quebecers have on average 7.7 sound teeth, (free of caries and fillings) compared with 2.4 filled and 2.3 decayed teeth, of which 0.7 are decayed at the root. Few people have bridges (1.8 per cent) or crowns (3.3 per cent).

Periodontium

Calculus was found in 68 per cent of people with at least one tooth and debris or calculus in 77.9 per cent. Almost half (45.7 per cent) the dentate survey population had gingivitis; among them a quarter (26.6 per cent) suffered from advanced periodontal disease.

Oral mucosa

From **Table III** it can be seen that stomatitis, hyperplastic tissue and ulcers were the most frequent problems of the oral mucosa. In the opinion of examiners, these were generally caused by the wearing of inadequate dentures. Two of the nine tumours were found to be of prosthetic origin; one was malignant.

Other anomalies

The following anomalies were recorded under this heading: exostosis, pronounced torus mandibularis or palatinus, impacted teeth causing protuberance of the oral mucosa, and abrasions or erosions significantly affecting a group of teeth. According to the examiners, 1.8 per cent of elderly people suffered from anomalies of these kinds.

Prosthetic status

A high proportion of Quebecers aged 65 and over wear full dentures, 78.6 per cent an upper and 65.6 per cent a lower one, while 64.7 per cent have full upper and lower dentures.

TREATMENT NEEDS

Over three-quarters of Quebecers (78.3 per cent) are in need of dental treatment of some kind. However, only 1.6 per cent require emergency treatment.

Dental

Among dentate individuals, 3.4 of the 12.4 remaining teeth require treatment. The average number of restorations needed is 1.1, and extractions 2.2.

Periodontal

Only 18.8 per cent of dentate individuals did not require treatment of the periodontium. The remainder required periodontal treatment without extraction (52.1 per cent), extraction of one or more teeth (16.6 per cent) or extraction of all remaining teeth (12.5 per cent).

Prosthetic

A need for prosthetic treatment (full and partial) was found among 70.4 per cent of elderly Quebecers. Half of the persons examined require new complete dentures, 50.3 per cent for the upper maxillary only and 53.8 per cent for the lower maxillary only, while 3 per cent are wearing dentures (full and partial) in need of repair.

CONDITIONS AND NEEDS ACCORDING TO SOCIODEMOGRAPHIC VARIABLES

DENTAL CONDITIONS

Table IV shows the components of the DMFT index – and ensuing needs – of subjects with at least one tooth. In view of the high rate of tooth mortality, the characteristics of the decayed teeth in relation to the variables are more marked. A subsequent article dealing with prosthetic status will present the distribution of full denture wearers according to the various sociodemographic variables and will illustrate the M component.

The number of fillings is a reflection of the care taken of the teeth. This is true especially among people in metropolitan regions, women (twice the figure for men) and among the better educated and more affluent. For the number of decayed and missing teeth, the differences are not statistically significant except for missing teeth as to the region.

TABLE V

Percentage of subjects requiring treatment according to various variables (weighted sample)

	Variables	Number	Treatment needs: Periodontal[1] %	Prosthetic[2] %	All categories %
Quebec		1822	81.2	70.4	78.3
Residence	Private residence	1694	81.0	70.5	78.5
	Nursing home	80	85.2	69.1	73.6
	Hospital	48	88.1	68.8	77.6
	Missing data	(0)			
Region	Metropolitan	774	73.0	72.5	79.6
	Urban	466	82.7 *	74.0 *	80.8
	Semi-urban and rural	582	91.2	64.2	74.5
	Missing data	(0)			
Sex	Male	873	84.4	74.1 *	80.4
	Female	949	77.2	67.3	76.3
	Missing data	(0)			
Age	65-74 yr	1182	80.8	69.2	77.6
	75-84	530	81.9 *	71.1	79.5
	85 +	107	83.8	82.7	81.3
	Missing data	(2)			
Education	0-4 yr	316	84.6	78.5	81.7
	5-7	768	89.8	64.6 **	74.1 *
	8-12	598	75.4	74.2	82.6
	13 +	111	71.0	69.5	76.2
	Missing data	(29)			
Income	$ 0-349	686	87.8	68.6	77.0
	350-499	759	84.1	69.8	77.9
	500-999	171	75.7	70.3	78.1
	1,000 +	29	50.4	58.8	80.3
	Missing data	(177)			

* *if* $\varrho \leq 0.05$ (chi-square test)
** *if* $\varrho \leq 0.01$ (chi-square test)
[1] = subjects with at least one tooth
[2] = denture wearers

TABLE VI

Details of studies on the elderly

Authors	Country	Survey components: Interview	Survey components: Examination	Subject characteristics: Age	Subject characteristics: Number	Subject characteristics: Residence
Grabowski & Bertram (4)	Denmark	X	X	65 +	560	Home
Christensen (3)	Denmark	X	X	65-74	785	Home
Mäkilä (5)	Finland		X	65 +	488	Nursing home
Rise & Heløe (6)	Norway	X	X	65-79	241	Home
Smith & Sheiham (7)	England	X	X	65 +	254	Home

TREATMENT NEEDS

Treatment of the periodontium is required by 81.2 per cent of people aged 65 and over with at least one tooth. **Table V** indicates that the need is greater among the very elderly and those living outside metropolitan regions. Prosthetic treatment is required by 70.4 per cent of elderly Quebecers, regardless of whether they live at home or in an institution, but predominantly by those living in metropolitan regions, men and the less educated. Over three-quarters of elderly Quebecers are in need of dental treatment; this holds true for all variables considered since, in each case, between 73 and 83 per cent of the survey population require treatment.

COMPARISON WITH OTHER STUDIES

A review of the literature shows that no common methodology was followed in previous studies, which have almost always dealt with segments of the population that were unrepresentative of the whole. Therefore great caution had to be exercised in comparing the results. Accordingly this article will draw comparisons only with respect to the rate of tooth mortality, the percentage of people with caries and periodontal disease, and of those requiring treatment.

Table VI gives some details of the studies conducted since 1975 with which comparisons are drawn to show the scope and limitations of such comparisons.

Rate of tooth mortality

The rate of edentulousness in Quebec (72 per cent) is comparable with the findings of other studies. A similar situation was found in other countries in surveys carried out by Christensen[2] in Denmark (66 per cent), Grabowski and Bertram[3] (68 per cent), Mäkilä[4] in Finland (67 per cent), Rise and Helöe[5] in Norway (80 per cent), and Smith and Sheiham[6] in England (74 per cent). As a general rule, studies show that edentulousness is higher among women than men and that it increases with urbanization and decreases with education.

The Iowa survey conducted in 1980 shows a less dramatic edentulousness pattern: 34 per cent in the 65 to 74 age group and 44 per cent for people 75 and over. A greater proportion of males are edentulous. In the age group 75 and older there is an extremely large jump in edentulousness in females.[7]

Percentage of dentate individuals with caries and periodontal disease

This study found that 64 per cent of dentate individuals had caries and 81 per cent had periodontal disease. Smith and Sheiham noted similar results: 62 per cent and 72 per cent, respectively. Christensen found that 93 per cent of the elderly persons examined required "treatment other than a minor scaling". Mäkilä noted that "very nearly all of the dentulous elderly persons had caries" and that 99 per cent had periodontal disease. Fifty-two out of every 100 Iowans in the 65 to 74 year old group have some periodontal disease. The proportion is about the same (50 per cent) for people aged 75 and over.

Percentage of persons in need of treatment

The survey shows that 78.3 per cent of elderly Quebecers require dental treatment. Graboswki and Bertram[3] found that 80 per cent of Danes require treatment. The percentage was much higher, however, according to Christensen,[2] who reported that 87 per cent of those examined required prosthetic treatment, 93 per cent of dentate individuals scored more than 1 on the Russell periodontal index and they had as many decayed teeth as sound ones. Mäkilä[4] found that 100 per cent of dentate Finns and 99 per cent of denture wearers were in need of treatment. Rise and Helöe's study[5] showed that 97 per cent of Norwegians were in need of dental treatment, whereas the figure was 78 per cent in England, according to Smith and Sheiham.[6]

The Iowa survey shows that for every 1,000 Iowans aged 65 to 74, 391 restorations and 141 extractions were needed: for the 75-year-old and over group – 361 restorations and 28 extractions. Furthermore, for 1,000 persons aged 65 and over, about 110 crowns were needed. It was found that 797 teeth needed partials or bridges in the 65 to 74 year age group. In Quebec, for every 1,000 persons aged 65 to 74, 345 teeth need to be restored, 465 new complete upper dentures are required on the upper arch and 506 in the lower. The data for the 75-year-old and over group are 268, 575 and 598, respectively.

The dental health of the elderly population in the Province of Quebec, bad as it appears to be, is nevertheless quite similar to that already observed in other countries – except in the State of Iowa, U.S.A. – according to the scientific literature.

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Reprint requests to **Dr. Simard**.

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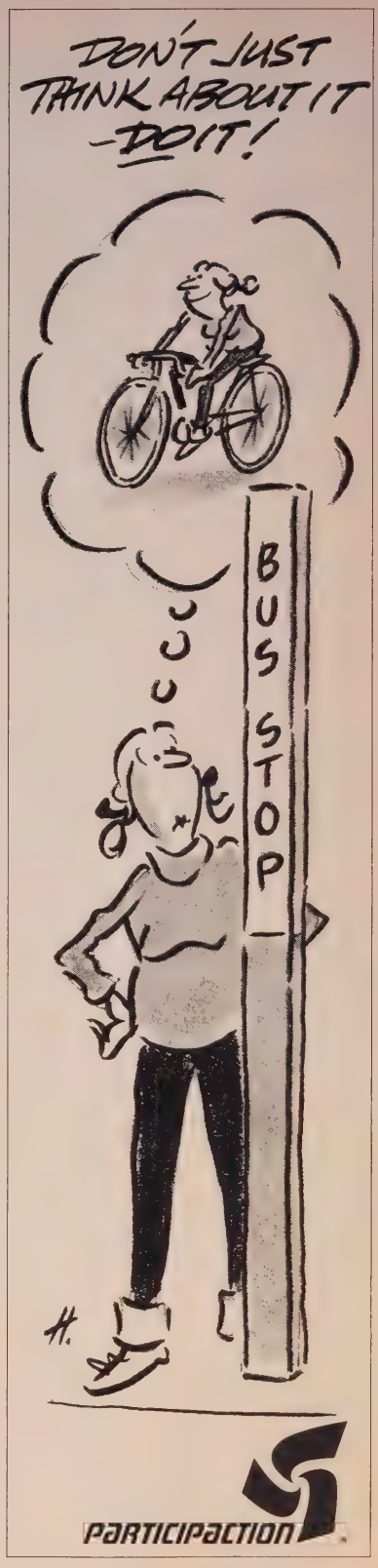

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A MESSAGE FROM THE PRESIDENT

Marking An Epoch

An epoch is defined as "a fixed or definite time; especially one marked by significant events". Such was a statement made in the opening pages of Volume 1, No. 1, January 1935 of the Journal of the Canadian Dental Association. With the publication of this anniversary issue, Volume 51, No. 1, January 1985, the Journal reaches another epoch; fifty years of publication.

The birth of the Journal fifty years ago was no chance occasion or accident. It followed the birth and demise of ten previous Canadian dental publications – from the "Family Dentist" in 1854, to the immediate predecessor of the Journal of the Canadian Dental Association, the Dominion Dental Journal, 1889 - 1935. The very fact that the Journal of the Canadian Dental Association has continued to be "the written word of Canadian Dentistry" for fifty years attests to the wisdom and original premise of its early planners; that a Dental Journal would only remain, and remain meaningful and influential, if it was sponsored by the national dental association.

Vision, desire and oneness for professionalism must surely have instilled the minds of that committee of four during the early 1930's – in the midst of the worst economic depression this country has ever known. Under the chairmanship of Dr. M.H. Garvin, those original members, Dr. Phillipe Hamel of Quebec, Drs. Fred J. Conboy and Stephen A. Moore of Toronto, laboured four long years to bring a dream into fruition. Dr. Gavin was to become the first editor; Dr. Hamel was the Journal's first French editor, and Dr. Moore, a past president of the Ontario Dental Association, became the first business manager.

Dr. M.H. "Harry" Garvin, 1879 - 1974, was to remain Editor of the Journal for twenty years. Throughout those years he performed his editorial duties without remuneration, from a desk at the back of his busy Winnipeg dental practice, a practice he maintained for 62 years. Having graduated in 1902 from the University of Pennsylvania Dental School and in 1903 from the Dental Faculty at the University of Toronto, Dr. Garvin had an illustrious dental career. He held almost every possible Association office – local, provincial, national and international, including President of CDA in 1930. Besides his Journal editorial tasks; his association obligations, and his private dental practice, Dr. Garvin somehow found time to contribute 21 dental articles outside the Journal of the Canadian Dental Association. Truly a remarkable career and it was during those first twenty years of Dr. Garvin's editorship, that the Journal became firmly established.

This writer was fortunate enough to have been a student of Dr. Garvin's in 1960. At the "young" age of 81, Dr. Garvin, *still* in active practice, found time to lecture in the subjects of Dental History, Ethics and Jurisprudence, to aspiring dental students at the then "new" Dental Faculty at the University of Manitoba.

It is only fitting, on the occasion of the fiftieth anniversary of the Journal of the Canadian Dental Association that we reprint an excerpt from Dr. M.H. Garvin's first editorial in Volume 1, No. 1. An editorial as meaningful today as it was in 1935. . .

. . .When one realizes the great need for such an Association (ie, CDA) and mentally calculates the amount of work undertaken by our standing and special committees: when one considers the tasks still to be undertaken along the lines of research, dental health education, library bureau, bureau of chemistry and dental therapy, dental educational council, relief work, bureau of dental economics: and when one ponders on the national and international relationships, also the talked-of changes in our scheme of things from a state dentistry point of view – one is fired with the vital need of strengthening as rapidly as possible our CDA.

Truly the marking of an epoch!!

Dr. P. Ralph Crawford
President, CDA

ANYTHING YOU CAN DO, WE CAN DO BETTER.

Holding the position of Editor during the 50th year of the Journal of the Canadian Dental Association makes one take a good long look forward and an even longer one backward. Casting that backward look, indeed, is enough to give one pause and a renewed sense of the responsibility with which I have been entrusted.

The Journal has always endeavoured to serve the profession and the membership of the Canadian Dental Association in both official languages (long before they were official), with a great deal of professionalism, non- bias and scientific expertise.

In 50 years of publication, in my opinion, the Journal has achieved all it set out to do and more. When Dr. Harry Garvin (a man of great achievement in all aspects of dentistry), and his colleagues envisioned a national dental Journal, they had in mind one which would strive for excellence, be of value and inspiration to the profession and promote comradeship between Canada's dentists and their counterparts in other parts of the world.

For the most part, these hopes and aspirations for our national voice, this Journal, have been realized. Dr. Harry Garvin was a giant in the dental profession and it took such a man to begin this Journal. Following closely in his footsteps was Dr. Wesley J. Dunn, the second editor from 1953 to 1958, a distinguished academic who still, from time to time, finds time to grace these pages. While it is not necessary here to repeat the list of my distinguished predecessors, which Dr. Dunn has taken care to do very well, it is enough just reading that list to inspire me as present editor and fire a competitive spirit.

As someone once said or sang "Anything you can do, I can do better." While my editorial arrogance does not extend to even comparing this volume or myself as its editor with Dr. Harry Garvin and the inaugural edition, it is my opinion that the Journal of the Canadian Dental Association has come a long way in 50 years and I am committed to keeping up the standard of excellence which the Journal has achieved in those decades.

The future lies before us on the Journal and the Journal has undergone many changes, from a major redesign in format to a major redirection in content to help bring this 50 year old publication into the 1980's and keep it up to par in the future. The Journal started its facelift in February of 1984, with a philosophy that it should be set to appeal to the Total Dentist. I believe, as editor, that inroads in that direction have been made with an improvement in content – both scientific and non-scientific. As Editor during this 50th year, it is my sincere hope that the Journal will continue to "have insight into the dental problems of the day (and) that something may be said that will bring a measure of instruction, of inspiration and of contentment to those who read," to quote Dr. Garvin's first editorial.

So while the Journal is a modern publication, led by and read by, one hopes, modern minds, it still has and keeps a sense of the original vision of that brilliant Manitoban who was its first editor. But still, it is the commitment of this Editor and the editorial staff to prove in the coming years that anything he could do, we can (hopefully) do better.

Carolyn Hackland
Editor

THE JOURNAL – SALUTATION

Dr. M.H. Garvin

Editor's note: *The following is a foreword written by Dr. M.H. Garvin in the first edition of this Journal in January, 1935. We believe, because it offers much insight into the personality and goals of Dr. Garvin, and also the objectives of this Journal, that it should be reprinted in full on this memorable occasion.*

As the smallest child, John was taught by his staunch Presbyterian parents that what was to be, would be, and that no amount of effort on his part could change the predestined course of events.

One day John fell down the cellar stairs and bruised himself severely. The mother arrived just in time to see him pulling himself together, brushing off the dust, and to hear him say, "Thank the Lord that is over."

We do not advance any arguments for the doctrine of predestination, but we do express thanks that the years of effort that have been put forth in order to secure an official journal of our Canadian Dental Association have been rewarded at last.

For some years voices have been raised in a demand for a national journal, owned and directed by the Canadian Dental Association. These voices have continued to increase in volume and have become increasingly insistent, and now their desires have been in part satisfied.

With this issue, The Journal of the Canadian Dental Association; Le Journal de l'Association Dentaire Canadienne goes into Volume One, Number One, thus marking another milestone in the history of dentistry in Canada.

The publication of a journal is intimately linked up with the growth and development of our national Association.

When one visualizes the great need for such an Association, and mentally calculates the amount of work undertaken by our standing and special committees; when one considers the tasks still to be undertaken along the lines of research, dental health education, library bureau, bureau of chemistry and dental therapeutics, dental educational council, relief work, bureau of dental economics; and when one ponders on the national and international relationships, also the talked-of changes in our scheme of things from a State dentistry point of view, — one is fired with the vital need of strengthening as rapidly as possible our Canadian Dental Association.

Our Journal stands at the door, ready to assist in this task, ready to broadcast throughout the Canadian profession an accomplishment in any one section of the profession, ready to bridge the gap between professional achievement and the public needs. It aspires, through our dental leaders, to mould the thought of the profession, to guide its hopes and clarify its problems, supporting all things which elevate and inspire. It will glean from every section of the Empire, every phase of dental life, from every realm of scientific research, in order to spur us on to greater endeavour. The Journal hopes to speak for our Association and to be its official organ, serving as a mirror of dental life in Canada and at the same time being a journal of constructive opinion, fighting in season and out of season for the highest and noblest principles, thus representing the best traditions of Canadian Dentistry.

The editorial policy of the Journal will be, as far as possible, under the direct control of the Association. It will be the constant aim of the officers and staff to make the Journal stand highest in honor, rank greatest in dignity, shine brightest in excellence, depict the widest range of triumph in the scientific achievements of our profession and interpret in the fullest possible manner the handwriting on the wall as that handwriting refers to dentistry. It should help to emancipate some of the older practitioners from bondage if they will but read; should encourage and inspire the younger practitioners; and should enrich all, controlling thus both history and destiny and establishing more firmly a truly professional status throughout this Dominion of ours.

This Journal is also unique in that it is a bilingual journal, a certain portion of the text being in French. We welcome this innovation. We prize the cultural value it will prove to the English dentist if he will acquire a reading knowledge, at least, of the French language. We English dentists value also this closer fellowship with our brothers in the French section of our great two-languaged Dominion. Dr. Philippe Hamel of Quebec City, who has given unstintingly of his time and strength in the interests of Canadian dentistry, has consented to edit the French section of our Journal. His interest, his enthusiasm, his loyalty, and his ability will prove to be a large factor in climbing the heights we expect to reach.

Dr. A.E. Webster, who has for thirty-five years edited Dominion Dental Journal and who has had showered upon him practically all the gifts that are in the hands of the profession to bestow, is to be our honorary editor, a relationship which is deeply appreciated by all concerned.

Dr. Stephen A. Moore of London, Ontario, past president of the Ontario Dental Association, will be our business manager. Dr. Moore has done endless work of a skilful and painstaking nature to bring the publishing of our national journal to a successful consummation.

The editor is fearfully aware of the many difficulties in editing a journal. Men are different, and what will suit one will not suit another. Some insist on the practical, while others are interested largely in the various phases of research. Mistakes will be made and by some these will be magnified; but we believe that the large majority will appreciate the problem and be charitable. Whatever may come, the editor will sincerely try to have imaginative sympathy and to represent the interests of the dentists of Canada. The man without such sympathy is a stumbling-block in the world today. The editor wonders if he has that imaginative sympathy. Does he know the problems and difficulties and heartaches that many in our profession have to face, problems of diagnosis, of treatment, of office management, of practice building, problems of misunderstanding in the home, of sickness and of finance, the problems of the man who has danced to the tune of prosperity and now has drifted high and dry on the shores of defeat?

He sincerely trusts that if this sympathy is now lacking in any way, it will soon be acquired, that the Journal may prove to be of increasing value and inspiration to all, that it may be a most effective factor in developing a homogeneous good fellowship not only among the men who direct dental affairs throughout Canada, but also among the rank and file of our profession. To keep one's feet on the ground and yet live among the stars, is not an easy task.

The prophet Daniel was placed head of one hundred and twenty-two leaders in the kingdom of Darius the Median, and he had one hundred and twenty-two of them against him. He had the friendship of the King and he had the laws of the Medes and Persians against him; consequently he was thrown into the den of lions. However, through all of these trials, he remained faithful to his convictions and his God. The editor of this Journal trusts that as long as he and those who are associated with him, hold this honor and this privilege of carrying on the constructive work of building up a strong national dental organization, they will remain not only faithful to the living God but may be faithful to the trust that has been placed in their hands, that whatever the influence of a personal nature that is brought to bear, whatever the political or group influence that is interjected into the dental council chambers, they will be true to the Vision that is theirs, that they will be true to the spirit of nationalism which insists that the welfare of the dentists of Canada from coast to coast shall take precedence over the desires and interests of any particular section of our country.

It is the ambition of all of those connected with this publication that they should have insight into the dental problems of the day, that something may be said that will bring a measure of instruction, of inspiration, and of contentment to those who read; for "Happy is the man who has that in his soul which acts upon others as April airs on violet roots. Gifts from the hand are silver and gold, but the heart gives that which neither silver nor gold can buy. To be full of goodness, full of cheerfulness, full of sympathy, full of hope, causes a man to move on human life as stars move on dark seas to bewildered mariners."

DR. MATTHEW HENRY GARVIN, DDS, MICD, LLD
THE JOURNAL'S FIRST

EDITOR AND FOUNDER

DESCRIBED AS "A GIANT OF A MAN"

Dr. M.H. Garvin, the founder and first editor of the Journal of the Canadian Dental Association has been described as "a giant of a man" in the annuals of dentistry in Canada, by CDA President Dr. P. Ralph Crawford.

Born October 11, 1879 in Newcastle, Ontario, Dr. Garvin received his early education in Hamilton, Ont., and graduated in dentistry from the University of Pennsylvania in 1902 and from the University of Toronto a year later.

He established a practice in Winnipeg which he carried on until his retirement there in 1965.

Many achievements

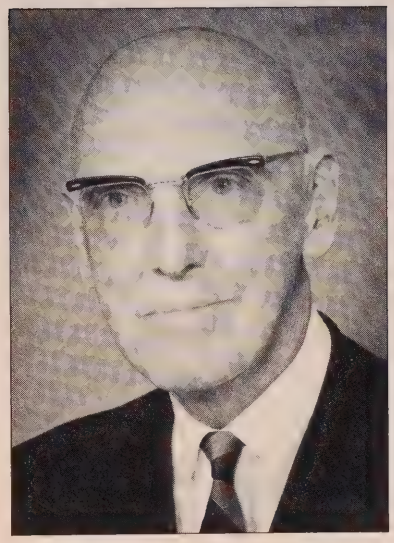
His massive array of achievements bears out Dr. Crawford's observation.

In 1918, he received the Second Prize Medal in the Canadian Dental Research Contest.

Dr. Garvin was a past president of the Canadian Dental Association (1929-30), the American Academy of Periodontology, the Western Canada Dental Society, the Manitoba Dental Association and the Winnipeg Dental Society.

In 1930, Dr. Garvin represented Canada at the first Empire Dental Conference in London, England. He was chairman of the committee that planned the publication of the Journal of the Canadian Dental Association and was editor for 19 years.

In 1963, he was made an Honorary Life Member of the Western Canada Dental Society. He was also an Honorary Member of the Canadian Dental Association, the British Dental Association, and the Canadian Academy of Periodontology.



Dr. M.H. Garvin

Dr. Garvin was a Master of the International College of Dentists, an Honorary Fellow of the Royal College of Dentists of Canada, and was awarded the degree Doctor of Laws by the University of Manitoba.

In 1967, he received the Canadian Centennial Medal for valuable service to his country.

By 1952, Dr. Garvin had published 21 original papers in dental journals other than the Journal of the Canadian Dental Association.

He was a member of the Pierre Fauchard Academy and the Omicron Kappa Upsilon Honorary Dental Fraternity, and Honorary member of the Canadian Dental Nurses' and Assistants' Association and the Western Canada Dental Nurses' and Assistants' Association.

Lecturer in dentistry

Dr. Garvin enjoyed the honor of giving the opening address to the Freshman Class of the Faculty of Dentistry, University of Manitoba. He had been a lecturer on the History of Dentistry from the inception of the Manitoba dental college until 1971, when he was in his 92nd year.

Religious leadership

A deeply religious man, Dr. Garvin offered leadership in this area also. He was chairman of the board of his church for 12 years, an active and honorary member of the Gideon Society, a member of the board of the Canadian Sunday School Mission and the Inter-Varsity Christian Fellowship.

He was also a member of the Christian Business Men's Committee and the Christian Medical Society.

Died at 94

Dr. Garvin's illustrious life came to a close on June 28, 1974, when he died in his 95th year, in Winnipeg.

His largely attended funeral included dental and medical officials and colleagues from across Canada and the United States.

Dr. Garvin's widow, Vera Marguerite, survives and is living in Winnipeg.

THE JOURNAL FIFTY YEARS OF SERVICE

*Wesley J. Dunn, DDS, FACD, FRCD(C) (Hon.)**

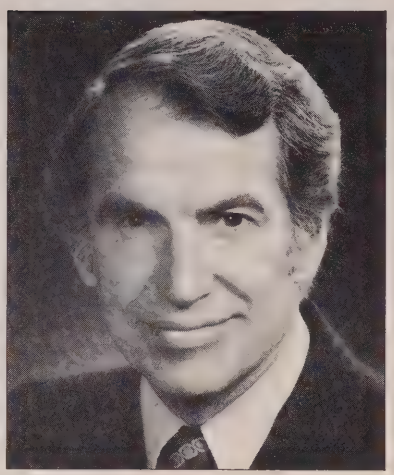
The year was 1934. President von Hindenburg of Germany died and Adolph Hitler assumed full power. The civil war in Austria and the declaration of martial law was sufficient for Mussolini to mass his troops on the Austrian border. Winston Churchill was sounding warnings, then largely unheeded, charging that Germany was maintaining a "reign of terror" in war preparations.

In Canada, R.B. Bennett was the Conservative Prime Minister and W.L. MacKenzie King the Leader of the Liberal opposition. The Co-operative Commonwealth Federation was only one year from having had adopted its Regina Manifesto. The Dominion/Provincial Conference attempted to reach an understanding about the relief of unemployment and kindred matters arising from the economic depression. The year saw the proposals for the revision of *The British North America Act*. And the issue of a distinctive flag for Canada was again shelved by the House of Commons. There were, however, celebrations throughout the country on the fourth centenary of the discovery of Canada by Jacques Cartier.

The budget deficit was reduced by $22,500,000 and the bank interest rate was cut to two percent.

The birth of the Dionne quintuplets, near Callandar, Ontario, caught the interest of the world. An American in New York was moved to recommend that the attending physician, Dr. W.A. Dafoe, become the recipient of a Nobel prize. Camilien Houde was returned as mayor of Montreal and Frederick Banting was knighted on June 3rd while my parents celebrated the twelfth anniversary of their marriage! The Cobourg born Canadian film actress, Leila Koerberg, probably better known as Marie Dressler, died after a lengthy battle with cancer. Max Baer defeated the Italian giant, Primo Carnera, for the world heavyweight title and Fred Perry was successful at Wimbledon.

John Dillinger escaped from an Indiana jail, killing two policemen and wounding four



Wesley J. Dunn

others in the process but in a few weeks was himself the fatal victim of a police trap in Chicago. Clyde Barrow and Bonnie Parker reached the end of their dubious careers in a police shoot-out in Louisiana. And Bruno Hauptmann was arrested in New York for the kidnapping of the Lindberg baby. In Ontario, between London and Sarnia, John Labatt was abducted and, for Canada, this was the first reported kidnapping for ransom. Three days later he was released unharmed and returned to his home in London.

The sale of beer and wine began in hotel beverage rooms in Ontario and the Roman Catholic Church in the province organized The League of Decency to combat indecent films. The liner Queen Mary was launched with appropriate celebrations while, under the surface of the water, William Beebe and Otis Barton, in their bathysphere, descended to the hitherto unattainable depth of 2,500 feet in the waters off Bermuda.

And, in Montreal, Dr. F.A. Stevenson, who presided at the inaugural meeting of the Canadian Dental Association and who was its first president thirty-two years before the association's Journal was launched, died in the city of his adoption after a long and distinguished career.

*Professor, Division of Community Dentistry
The University of Western Ontario

'Heroic' planning sessions

1934 witnessed something else – the culmination of four years of effective planning, diplomatic negotiation and, at times, almost heroic efforts on the part of a committee of the association's House of Delegates from which, in January 1935, the first issue of the *Journal of the Canadian Dental Association* emerged. The committee comprised Dr. Philippe Hamel of Quebec, Dr. Fred J. Conboy of Toronto (a decade later its mayor), and the "father" of the Journal, Dr. M. Harry Garvin of Winnipeg, the 1929-1930 president of the association, as chairman. Dr. Conboy subsequently resigned and was replaced by Dr. Stephen A. Moore of London, Ontario who, for the first eight years of the Journal's existence, served as its business manager.

For many years voices had been raised, within the profession, for a national journal owned and directed by the Canadian Dental Association. The Journal was perceived as a vital component of a growing and developing organization which had already set goals for the profession and itself in research, dental health education, a library bureau, a bureau of chemistry and dental therapeutics, a dental educational council, relief work, and a bureau of dental economics. The association was also concerned with international relationships and about what was then called 'state dentistry'.

There were five dental publications, with national pretentions, which preceded the *Journal of the Canadian Dental Association*. The first was a short lived effort, *The Family Dentist*, which, edited and published by S.S. Blodgett of Brockville, Ontario, made its appearance in 1854.

In September 1858, *The Journal of the*

Times was first published as a quarterly in Halifax, Nova Scotia by Drs. Paine and Macallaster. It ceased with its seventh issue in June 1860. The initial intention of the publishers was to advertise and promote their 'business' and it was said of it "that their advertisements were not flagrantly unethical." It is ironic to contemplate whether such observations made by dentists 125 years ago would be so charitable were they to opine on some of the execrable promotional excesses currently inflicting themselves on this continent.

The *"Canada Journal of Dental Science"*, clearly the pioneer dental journal in this country, made its first appearance in June 1868 in Montreal. Although, after the first three volumes, its issues were irregular, it persisted in its efforts until August 1879 when it discontinued publication. The journal's policies were directed by W. George Beers of Montreal with a Toronto physician, J. Stewart Scott, as associate.

The *Dominion Dental Journal* was founded in 1889 with Dr. Beers becoming its first editor-in-chief, a position he occupied for the first almost two years of the publication's existence. His assistant editors were C.S. Chittendon of Ontario and A.C. Cogswell of Nova Scotia. The *Dominion Dental Journal* was first published as a quarterly continuing as such until the beginning of its third volume when it was issued twice a month. In 1893, it became a monthly publication. Albert E. Webster succeeded to the editorship upon Dr. Beers' death in 1900 and subsequently guided the fortunes of the journal for the next three and a half decades. For the period 1915 to 1923, Dr. Webster, who was qualified both in dentistry and in medicine, was Dean of the School of Dentistry of The Royal College of Dental Surgeons of Ontario.

French publication absorbed

In 1918, *La Revue Dentaire Canadienne* was born as a monthly publication in Montreal under the editorship of Honoré Thibault. Seventeen volumes were published before 'La Revue' became absorbed by the *Journal of the Canadian Dental Association*.

The negotiations of 1934 resulted in the first number of volume one of the *Journal of the Canadian Dental Association* in January 1935. M.H. Garvin was editor-in-chief and A.E. Webster was made honorary editor, a post he was regrettably able to occupy for only a short time as he died the following November. From the beginning, the Journal included a Section Francaise, the founding redacteur being Dr. Philippe Hamel, the 1932-1933 president of the Canadian Dental Association, the third French speaking dentist to occupy that post. Consolidated Press, the owner and publisher of the *Dominion Dental Journal*, continued as the publisher of the successor but relinquished ownership to the association.

Dr. Garvin gathered about him a group of associate editors – one from each province – and an assistant to the editor of the French section. In addition, there were seven Empire correspondents and four others, two from France and one each from Belgium and Switzerland.

Dr. T.R. Marshall of Toronto merits special mention because to him, as the associate editor for Ontario residing in the city in which the journal was published, fell most of the hands-on responsibility for the publication. Dr. Marshall became assistant editor in 1942 retiring on the conclusion of Dr. Garvin's editorship with the June issue of 1953.

Served 43 years

Dr. Garvin was not without preparation for the founding editorship of the Journal. He had been an associate editor of the *Dominion Dental Journal* for the previous twenty-four years. In all, this giant of Canadian dentistry – born in Newcastle, Ontario, raised in Hamilton, graduating in dentistry from Pennsylvania in 1902 and The Royal College of Dental Surgeons of Ontario in 1903, a founder of the American Academy of Periodontology, and practising for sixty-two years in Winnipeg – devoted almost forty-three highly productive years to dental journalism. His contributions had influence not only in his native country but throughout the world. It is a fact that twenty-two of his papers were published in dental periodicals outside Canada. Harry Garvin's services to dental journalism were unique. None of the readers of this issue will live to see his like again.

In his first editorial, Dr. Garvin enunciated a lofty goal for the infant publication – "ready to broadcast throughout the Canadian profession an accomplishment in any one section of the profession, ready to bridge the gap between professional achievement and the public needs. It aspires, through our dental leaders, to mould the thought of the profession, to guide its hopes and clarify its problems, supporting all things which elevate and inspire. It will glean, from every section of the Empire, every phase of dental life from every realm of scientific research, in order to spur us on to greater endeavour. The Journal hopes to speak for our Association and to be its official organ, serving as a mirror of dental life in Canada and, at the same time, being a journal of constructive opinion, fighting in season and out of season for the highest and noblest principles thus representing the best traditions of Canadian Dentistry."

Given the responsible leadership the Canadian Dental Association has always exerted concerning the prevention of dental and oral diseases, it is significant that the Journal's first article should address the topic, "Preventive Dentistry – Its Possibilities and Limitations." The author was Arthur H. Merritt of New York.

Two other English papers, both by distinguished Ottawa dentists, graced the first issue. James P. Coupland, years later to become the President of The Royal College of Dental Surgeons of Ontario and the President of the Canadian Dental Association knowledgeably addressed himself to the topic "Radiography in Dentistry." Felix A. French, the possessor of a deserved international reputation as a clinician and lecturer in prosthodontics, competently presented his topic, "The Function of Artificial Dentures and Main Anatomical Parts of Denture Space." The article in the French section was a Jules Hamel translation of a presentation to the 1934 Fall Clinic of the Montreal Dental Club by M.M. De Van of Philadelphia, "Confection d'une Prosthèse de 'Substitution Immediate' Avant l'Avulsion des dents naturelles condamnées à l'extraction."

The twelve issues of volume one included many articles of original communication, most of them by Canadian dentists, as well as portraits and biographies of Canadian dental leaders, editorials, news from the provinces, general news, and an 'In Memoriam' section. One of the articles of Volume One presaged the interests and capacities of the future 'Father of Canadian Paedodontics,' Dr. Stewart A. "Sandy" MacGregor, then a general practitioner, when his first national article, "Understanding the Child", appeared in the November issue.

Following a relatively brief period of responsibility for the French section, Philippe Hamel was succeeded, in 1937, by Alcide Thibaudeau who served until 1946 when Gerard de Montigny assumed the editorship of the section, remaining and providing exemplary services within the post for the following eighteen years.

Dr. Moore continued as business manager of the Journal until his retirement in 1943 at which time he was succeeded by Don W. Gullett who, in addition to that responsibility, served as half time Secretary-Treasurer of the Association and half-time as the Registrar-Secretary-Treasurer of The Royal College of Dental Surgeons of Ontario.

Dr. Garvin penned his final editorial, "We lay down the pen", for the June 1953 issue. The writer, the founding editor's successor, wrote in his first issue in July 1953 that "it is difficult to appreciate the attendant problems in the early years of the development of this publication. That these difficulties were so ably overcome and the Journal is now regarded as one of the world's leading dental periodicals is a fact that will remain eternally to the credit of Dr. Garvin and

those with whom he was associated.'' The insights gained over the intervening three decades have done nothing but enhance and fortify that original contention. It continues to accord retrospective pleasure that the issue of September 1953 was dedicated to Doctors Garvin and Marshall, ''men of high ideals, lofty purposes and sound principles who, for so many years guided the destinies of the *Journal of the Canadian Dental Association*.''

Dr. Dunn, the second editor

This writer, the second editor, continued in the position until December 1958 when the requirements of the post of Registrar-Secretary-Treasurer of The Royal College of Dental Surgeons of Ontario became sufficiently demanding that they made a continuation of the proper exercise of editorial responsibilities quite impossible. For a period of almost three years, following succession to Dr. Gullett, the man who has probably made a greater contribution to Canadian dentistry than any other, the Journal editor and the College registrar had been attempting, with ever increasing personal dissatisfaction, adequately to discharge the duties and responsibilities of both positions. It was with consummate satisfaction, therefore, that in the final issue of 1958 it was possible to introduce the new editor, Edward R. Bilkey, a colleague who had been an associate editor for Ontario since 1956. Because Dr. Bilkey had already made many significant contributions to dentistry both in its educational and organizational arms and because he possessed an enviable facility with the language, the association's publications committee wisely placed the editorial responsibility in his capable hands.

By mid 1960, it had become apparent to the association's committee and to its board that the post, combining the role of Director of Communications, should become one of full-time involvement. Thus, in October of that year, Dr. Frank H. Compton, at the time Director of the Division of Dental Services of the Department of Public Health of the City of Toronto, became the Journal's fourth editor and the first to assume responsibilities within the association on a full-time basis. Under Dr. Compton's knowledgeable, competent, and conscientious direction it is not an overstatement to conclude that the *Journal of the Canadian Dental Association* became one of the world's leading dental association publications.

Dr. Compton regroups articles

Early in his editorship, Dr. Compton, with the co-operation of the editor of the French section, undertook a regrouping of the Journal. Articles appearing in the English language included resumés in French as those in French correspondingly became more valuable to the English speaking readers because of the summaries in their tongue. In 1968, Georges Pelletier became the redacteur adjoint followed one year later by M.P. Tenenbaum. In 1970, the Journal adopted a new size and format introducing the changes to the readers with an editorial, ''New dress, new start.'' The dimensions then adopted have remained.

Dr. Compton, in 1967, succeeded to the presidency of the American Association of Dental Editors and, one year later, was honoured by the William G. Gies Foundation for the Advancement of Dentistry with the presentation of its prestigious Editorial Award in recognition of an editorial appearing in the issue of February 1968, ''In Search of Understanding.'' Dr. Compton continued to give distinguished service until September 1972 prior to which time he had made a decision to undertake post graduate study thus becoming certified in periodontics in 1974.

Four years following Dr. Compton's appointment to the editorship, Dr. Gullett retired from the position of Executive Director of the association, the duties of which encompassed the business managership of the Journal. He was succeeded by yet another giant of Canadian dentistry, William G. McIntosh. Dr. McIntosh then became Business Manager, the position later being re-designated, Managing Director.

First non-dentist editor

In October 1972, the first non-dentist editor assumed responsibility when Diane Charter, who had been News Editor for the preceding ten months, became Acting Editor until July 1973 when Robert M. Grainger joined the association as Editor as well as assuming responsibility for the Bureau of Dental Statistics. Dr. Grainger continued until December 1974 when he was succeeded by Patricia Lundie who had been appointed News Editor in January 1974 and Managing Editor six months later. Paul Simard was redacteur adjoint in January 1974, Gerard de Montigny returning to the position the following July for the remainder of the year.

Dr. Compton was persuaded to rejoin the Journal in January 1975 as its Scientific Adviser, a post later re-named Scientific Editor. For the first time there was no redacteur adjoint but in October 1976, Robert Lambert was recruited as the first French Scientific Editor. Robert S. Turnbull of the Faculty of Dentistry of the University of Toronto became the English Scientific Editor in September 1976, a position this distinguished academic periodontist continues to occupy with great competence.

Diane Charter returned to the editorial chair in January 1977 and served until she was succeeded by Elizabeth McKee in 1979. Dr. Lambert exercised his responsibilities until the end of 1980 when, with the January 1981 issue, the current French Scientific Editor, Pierre Desautels, undertook the duties of the position.

The next editor was Lynne Owen who served from April 1981 to February 1982 following which there was a three month period with no designated editor. The Journal, however, came under the general oversight of Ann Hammell, the association's Director of Communications, and an Editorial Board which functioned under the effective chairmanship of Dr. Alexander MacLeod of the Faculty of Dentistry of Dalhousie University. Then in June 1982, one of the present editors, Clarence Metcalfe, was recruited to the staff of the association. At the same time, Heather Lang Runtz joined him as associate editor, a post she occupied until March 1983 when Carolyn Hackland undertook the duties for the remainder of the year, becoming Acting Editor in January 1984. In the following September, Ms. Hackland assumed full editorial responsibility for the Journal.

Change in distribution

At the September 1983 meeting of the Board of Governors, it was directed that, for the first time, non-members would not be included in the Journal's distribution, a policy which was implemented with the February 1984 issue. At the same time, another major change in design was announced. Only those members who were to indicate that their language choice is French would receive a French section containing news, association reports, and other brief items. Articles were to be published in the original language of the author, with either French or English summaries.

The Journal has, for fifty years, been the one constant vehicle of communication which has travelled the long and occasionally rocky road from the Atlantic to the Pacific contributing significantly to a vital national perspective in a country whose regulatory environment for health professions is constitutionally provincial in character. If there ever were any justification for provincial insularity certainly none exists to-day. Scientific, clinical, economic, political, and jurisprudential interests are not and should not be containable by provincial boundaries. As important as the Journal has been to the development of a national and international profile for dentistry in Canada over its first fifty years of distinguished service, the next half century will witness as yet indeterminable developments – not all of them desirable – in which the contributions of the Association's official publication will be of even greater consequence. The past is but prologue.

SHARED KNOWLEDGE AND WARM FRIENDLINESS BETWEEN CDA AND ADA

IN 1935. . . .

The Editor of the Journal of the American Dental Association, Dr. C.N. Johnson, sent this message of congratulations and encouragement to the Editor of the Journal of the Canadian Dental Association, Dr. M.H. Garvin:

A NATIONAL JOURNAL

By C.N. Johnson, Chicago, Illinois.

The need for a representative national organ in any profession must at once be apparent. Local societies and groups have their special interests and sometimes their special organs; provincial or state associations have their own autonomy, with policies that for the most part centre around the activities of a certain circumscribed territory, each dealing with a slightly different problem, and each influenced largely by the individual tendencies and personal propensities of the members who go to make up the group; all of these important in their way, but more or less limited in their function, and concerned chiefly with matters that in the very nature of things cannot make for the greatest breadth of vision or the more comprehensive conception of national problems.

A wider scope

It is here that an official publication comes in with a widened scope, dealing with those activities that concern the broader issues of professional life as they affect the nation at large. This is why it is so appropriate that Canada should have a national organ in the dental profession. The time is ripe and the need is urgent. Dentistry in Canada has grown out of its swaddling clothes, and is ready to assume the full stature of professional manhood. Its sons and daughters are marching arm in arm with the best dental minds of the world, and it is eminently fitting that they should be permitted to give full expression to their better impulses and their loftiest ambitions through the medium of a national magazine. They need one that shall be their very own, and that shall express their national characteristics, and be typical of the best traditions of their race and their craft.

They are a virile body, these dentists of Canada, capable of the highest possible achievement, and wanting only a national consciousness to stir them to the deepest depths of professional devotion and consecration. Too long they have been content to jog along the easy road of well trod paths and alluring by-ways, basking in the sunlight of least resistance, but now they must be stirred to a more vigorous resolve and assume a professional initiative that shall place them among the leaders of the profession of the world.

"Their names are known"

The dentists of Canada have the ability and the professional acumen to assume their proper place in the sun. All they need is breadth of vision and unity of purpose, and when I say their "proper place in the sun" I mean, of course, the sun of science. Some men there are in Canada who are doing a notable work in the science and art of dentistry. Their names are known wherever dentistry is known, and they are honored among men, but – there are not a sufficient number of them. Canada must develop more research workers, more men who are willing to dig and delve in the hidden mysteries of our art. Think of the many problems that are seeking solution today in our profession. Think of dental caries, think of erosion, think of all the problems involved in full denture work and the confusion that still exists in connection with it, think of the myriad agencies through which dentistry might be made better and more beneficial to mankind. And think what it would mean to Canadian dentistry if one of our Canadian colleagues could announce the solution of even a single perplexing problem that has heretofore baffled the profession.

What would it not mean to Canada and to the world at large if in a coming issue of *The Journal of The Canadian Dental Association* some son of Canada would tell the story of the etiology, the manifestations, and the cure of an outstanding dental disease. I cannot help hoping that I may live to see the day when this happy consummation shall be brought about, and I am even human enough to wish that the Editor would do me the favor of sending me advance information of the achievement so that I may be among the first to tender my felicitations to the fortunate research worker who has been successful in solving the problem.

No thrill in life is ever quite equal to that which sees the solution of a difficult problem in science, and the fortunate man is the one to whom it is given to see the light in advance of all the world. May we not hope that in the fruitful days to come *The Journal of The Canadian Dental Association* shall record many achievements of this kind, and thus take its place among the leaders of our professional periodicals.

My congratulations and heartiest good wishes go to the entire editorial staff, and to all of those who in any way are charged with the responsibility of bringing out the magazine. I shall watch for each issue with solicitous anticipation, and with the trustfulness born of complete confidence in the ability of the promoters to make a signal success of the enterprise.

In 1985, the present editor of the Journal of the American Dental Association, Dr. Roger H. Scholle, has also extended congratulations to our Journal.

'The CDA Journal has met the challenge'

It is a great pleasure to be able to congratulate the Journal of the Canadian Dental Association *as it celebrates a half-century of service, not only to the Canadian dental profession, but to all of dentistry. The* Journal of the Canadian Dental Association *has so capably reflected the highest standards of Canadian dentistry only because the journal itself has attained the highest standards of dental journalism.*

From our own experience with The Journal of the American Dental Association *we know that maintaining a quality journal of interest to a dental community with diverse and often specialized interests is an extremely difficult challenge. Clearly, the* Journal of the Canadian Dental Association *has successfully met this challenge for 50 years. It can acknowledge its maturity with great pride.*

Please accept very best wishes from The Journal of the American Dental Association *for many more decades of service to the dental profession – and happy birthday.*

Roger H. Scholle, DDS, MS
Editor, Journal of the American Dental Association

DENTAL SCHOOL SURVEYS

EARLY ACCREDITATION AT McGILL

Mervyn A. Rogers, DDS

Most readers are familiar with accreditation as it is carried out by the Canadian Dental Association. Many have been involved directly or indirectly in the process; still others have been affected by it. This excellent program which began in the 1950's continues to improve and to expand in scope until it has become the single most important function of the Councils on Education and Accreditation if not the CDA itself. Few know that nearly twenty years earlier the Faculty of Dentistry at McGill was visited by a survey team in what was surely the first accreditation visit in Canada. The report of that visit had important consequences for the school.

The survey team, made up of dentists from New York, visited the school during the 1930-31 academic year. Dr. Arthur L. Walsh, then acting dean of dentistry at McGill, writing in the *McGill News* at that time records that the survey was carried out at the request of Principal Sir Arthur Currie. The principal may have requested it but one can clearly see that Walsh was the instigator of the move. Walsh further records that "... our school was recently given a high rating by the Board of Dental Education of New York State".

Arthur Walsh had become acting dean in 1927. He was young, able and active and he was as ambitious for dental education in general as he was for his own school. He was to become president of the CDA and of the American Association of Dental Schools. Later he was appointed dean and remained in the post for twenty-one years.

McGill University, then a private institution, had always had financial difficulties;

Dr. Arthur Walsh

there never was enough money to expand and barely enough to survive. The university had closed its schools of veterinary medicine and pharmacy. When the great depression struck in 1929 McGill was forced to further curtail its spending and the Corporation considered closing the Faculty of Dentistry. Dental schools are very costly operations. The large classes which followed World War I – 31 graduated in 1923 and 40 in 1925 – had fallen to eight or nine students and would drop off still further. Six candidates graduated in 1933. Many members of these classes were from the upper United States, mostly from New York.

Walsh was determined that the faculty should continue and he wanted some outside authority to examine his program which he hoped would be seen as acceptable. He probably selected men from New York State hoping to publicize the school there. In this way candidates – and how he needed them – would continue to come from there and perhaps their licensure following graduation would be facilitated. The main objective, of course, was to convince the Corporation that the school was worthy of being continued.

Walsh won the day; the university agreed to retain the school and the faculty had survived its greatest crisis. There is little doubt that the survival of the school was due solely to his efforts. Some 1600 men and women who have graduated from the school since that time owe much to his foresight and perseverance.

Dr. Rogers is an Emeritus Professor of Dentistry at McGill.

Editor's footnote: It should also be noted that Dr. Arthur Walsh, while he was the President of CDA, (1942-43) played a large part in the creation of CDA's Committee on Education. This later became the Council on Education. The first surveys of dental schools in Canada were initiated by the Committee on Education, and Dr. Walsh himself was a member of one of the first survey teams.

FIFTY YEARS
OF DENTISTRY – DENTAL TECHNIQUES – DENTAL EQUIPMENT

Louis J. Rosen, DDS,
FACD, FAAE, FAOM, FICD, DABE, Cert., Endo., Que.

The writer has been permitted to cite his personal experiences of his early career as a dentist that would show how the profession has progressed in service to the public with new equipment, dental materials and techniques. To quote the Editor, "They, the young graduates, know the state of the art at the moment, what they don't know, for the most part, is, what it was like to be a dentist 50 years ago."

When an individual or an historian is given an assignment to review the history of an institution or an organization from its beginning to the present time, he may have to go back many years, even many years before he was born, to seek out the material. Having commenced practice some years before the founding of the Journal of the CDA in 1935, it will be a great delight to touch upon dentistry, dental equipment, dental materials and dental techniques, a little way back from the birth of the Journal, perhaps 15-17 years, when World War I was still being waged. In 1918, dentistry was a department of the Faculty of Medicine at the author's Alma Mater, McGill. In 1920 it gained the full status of the Faculty of Dentistry at the University.

Some anecdotes which the writer experienced as a student would bring out some chuckles from the young practitioners. The student, learning to take impressions for edentulous cases, with plaster of paris on mannequins was told to use salt as a catalyst. It happened that the tray was just filled with plaster for an upper impression. The instructor appeared on the scene, and seeing the student still supporting the tray that was applied to the upper jaw of the mannequin, inquired whether the student had used salt. The answer was no. The instructor went on his way, to another cubicle. The student added a little salt to the residue of plaster in the bowl.

Progressing further, students took impressions of other students with plaster of paris. This time, one student forgot how much salt to use – added too much salt. The impression got harder and harder and as the setting of plaster is a chemical action, accompanied with the generation of heat, we had to summon a dentist from the school to help the student in distress.

Dr. Louis J. Rosen

1922-1935

Local Anaesthetics

Ethyl Chloride from a spray was used to remove deciduous teeth, and to lance a small abscess. The dentist dissolved cocaine crystals in distilled water. It would be drawn into a luer syringe. Then the pharmaceutical companies would come out with a stock bottle of one or two ounces. This was followed by the manufacturers, to provide ampules which was finally followed by carpules which are still in great use. Picture the contamination that was prevalent over which the dentists had no control.

In the early twenties, Dr. J.J. Posner of New York demonstrated his inferior alveolar block, which took care of all lower posterior teeth on the side of the injection. There were no x-ray machines in dental offices. Dentists had to send their patients to hospitals equipped with x-ray machines for special x-ray studies with their bulky machines.

General Anaesthetics

Ether and chloroform were used. Dropping the ether, drop by drop, on a mask attached to the patient's nose and mouth. There were no anaesthesists. The general practitioner, (the physician) helped the dentist. He would place the mouth gag in the mouth. He would also open it, when ready. The dentist and the physician had several signals going between them. The physician made a test – by lifting an eye-lid. If the eyeball did not move, the patient was ready for the extractions. The signal, being given by the physician, then the dentist would direct that the mouth-gag was to be opened. The writer experienced when telling the physician to open, in a low voice, "The patient opened the mouth himself."

Equipment – Materials – Techniques

The foot engine was used by many dentists. The dental office equipment consisted mostly of a chair, cuspidor with running water, a medicine cabinet housing all materials and instruments and one or two extra side tables. A motor was made to be attached to the foot engine, with the switch at the foot of the chair. This contraption had a bracket on the wall. Then came the Trident Unit, with a bracket table. Soon after there was a unit with connections for compressed air and then the Master Unit. Utensils for sterilizing the instruments followed. A kidney pan was used, also special porcelain bake pans with covers. The heat was provided by gas in special bunsen burners. Then came the electrical sterilizer. The first ones made had no switch (automatic) that could be used to cut off the current. Solder was used to hold the sides together. Many a sterilizer was ruined by all the solder melting down, and the next morning, the sterilizer had legs to stand on.

Materials

Plaster of paris was still in use. Zinc-oxide powder with eugenol for bases of deep seated cavities – copper cements-amalgams – synthetic porcelain powder – vulcanite for dentures (red-dark elastic-gold dust) – gold foil fillings – gold bridges – gold inlays – shell crowns (gold) and three-quarter crowns.

The Canadian dentists had to rely upon other great journals, which were in existence at that point of time – to mention a few: The Journal of Dental Education, The Dental Cosmos, The Journal of the ADA. They provided references for all meetings and research projects. With regards to dental materials and equipment, the dentists depended on manufacturer's brochures and local dental supply houses for their bulletins and then lo and behold "1935" arrived and the first volume of the Journal of the Canadian Dental Association made its appearance and how the Canadian dentists welcomed it. From this point on, dental societies were able to print notices of scheduled monthly and annual meetings, reports of the transactions at meetings, articles on new discoveries, new techniques, news from the provinces of Canada and annual meetings of all important dental organizations around the world.

The impact of having its own Journal was responsible for the Canadian Dental Association's development as a more efficient agency – serving the interests of dentist-members. Dental manufacturers of new materials and equipment made use of the Journal in advertising their wares.

1935-1985

In 1944, the term antibiotic was introduced by Worksman et al. The first group included Penicillin, Streptomycin, Aureomycin, Terramycin etc. Then other groups followed, 1952, Volume 18, No 8. Articles on Oral Surgery – the Forum Book Review. Further additions were made to the format of the Journal. Public relations – Research and Annotations. The CFDE got recognition in the Journal. The Journal published the need for this type of organization and shortly the Fund reaped the benefits.

In the early fifties, the administrator of the economics department of the CDA got busy in selling his wares, which later developed into the CDSPI, catering to all the insurance needs of the Canadian dentists.

Going back again to the early forties, as the horizons opened up more widely on dental research and techniques, our members, through the service that the Journal offered in putting all this into print, encouraged the Canadian dentists to take post-graduate and graduate courses at the universities. This continued and continues to go on. Specialists have been certified in many specialties.

Research continued in the Medical profession, and the Biblical connotation of three score and ten no longer exists. It is now four score.

Dentistry kept pace with this research push and today, the onus is on the dentist to give the human being longer use of his masticatory apparatus. Here, the Journal is

Dental education environment has changed. *See also photo, page 61.*

Along with advances in the practice of dentistry itself, the dental education environment has changed drastically over the past 50 years. The two photos above illustrate facilities in the dental clinic of the Faculty of Dentistry of the University of Toronto in the 1920s, that today's dental student would have difficulty imagining. Particularly since that faculty has just moved into its new five-storey, $19 million building in Toronto. The Journal thanks the Faculty of Dentistry for the loan of these historic photographs from its archival collection.

doing yeoman work by bringing all this news to the dentists, all over the world. Without a flavour of favoritism, I note Endodontics! How well the Journal helped to supply the information to the general practitioner that Endodontics was a necessary part of the foundation stone of restorative dentistry. It is encouraging to add to this report the impact that Endodontics has made on dentistry.

The author feels that he is being joined by thousands of Canadian colleagues to wish the Journal of the CDA many more years to continue publishing the ever-growing advances in the Dental Profession.

To conclude this review, the author would like to quote from Cicero, "Not by physical force, not by bodily swiftness and agility are great things accomplished – but by deliberation, by experience and by judgement, qualities with which old age is adequately supplied."

Louis J. Rosen

Editor's footnote: *Dr. Rosen, a very active 85-year-old, living in Montreal, has been accorded many honors since his graduation from McGill in 1922.*

He was elected to Fellowship in the American Academy of Oral Medicine (1958), and the American Association of Endodontists (1966), a Life Fellow of the American College of Dentists (1970), the American Association of Endodontists (1971), and the American Academy of Oral Medicine, the same year.

He received a Certificate of Merit award from his Alma Mater, McGill University in 1971. Dr. Rosen had served as a lecturer in the Faculty of Dentistry from 1946 and was appointed Assistant Professor in 1966.

In recognition of his work in, and in support of hospital programs, Dr. Rosen was promoted to Honorary Attending Staff of the Montreal General Hospital in 1967. His keen interest had begun much earlier, when, in 1929 he served as captain of workers in campaigning for the building of the Jewish General Hospital in Montreal. He had served as a member of the attending staff of the Montreal General Hospital from 1946.

The ultimate honor came on the occasion of Dr. and Mrs. Rosen's 50th wedding anniversary in 1975, when family and friends established "The Louis J. and Amelia Rosen Fund," as a scholarship endowment for perpetual aid to students in the Faculty of Dental Medicine at the Hebrew University, Jerusalem.

The editorial staff is grateful that he agreed to share his thoughts with us and the readers, drawing on his extensive personal experience.

DENTISTRY IN ATLANTIC CANADA

O. Sykora, DDS, PhD
Dalhousie University, Halifax, Nova Scotia

ARCHEOLOGY, FOLKLORE AND THE PIONEERS

It has been said that a country which is not interested in its past either has none or is ashamed of it. The same principle can be applied to a profession within that country. Dental history in Atlantic Canada has a distinguished past, often a fascinating one, and we are not ashamed of it either. It may well have started with the archeological discovery at Port au Choix, Newfoundland. Dentists should note that virtually no dental caries could be found on the 4,300 year-old skeletal remains. Our colonial ancestors were less fortunate in early colonial North America. European writers often described the colonists as being "pitifully toothless".

Who is to be credited as being the first dentist in Atlantic Canada, or Canada for that matter? We know that Champlain brought with him an apothecary, Louis Hébert, when he founded the Acadian settlement Habitation Port Royal, on the Bay of Fundy. Since the apothecary would practice medicine, Louis Hébert would have performed dental emergency treatment as well at this first settlement. Excavations at the Fortress of Louisbourg, on Cape Breton Island, gave us an opportunity to observe restorative dentistry of the early 18th century. Teeth of two men buried in the King's Chapel had metallic fillings. Although these restorations were probably done in France, it is still considered the earliest dental restorative work found in Canada.

At the beginning of the 19th century, itinerant dentists started coming to Atlantic Canada from the United States. There were no regulations, no licenses, and very little training. Some would spend only limited time with an established practitioner to learn their skills. Exaggerated claims were made by many to impress the gullible public and secrecy of so-called superior techniques proliferated. People obtained information about the arrival of these itinerant dentist adventurers from local newspaper advertisements. The first recorded one in Atlantic Canada is the Nova Scotian Acadian Recorder, December 3, 1814, where a certain Mr. Hume, surgeon, living now on Barrington Street, "will also operate as a dentist in fixing artificial teeth. . .". Other visiting dentists were more flamboyant in their efforts to attract clientele. One of them, Louis de Chiverie, from Paris, who for several years commuted between Saint John, N.B. and Nova Scotia towns (according to the Acadian Reporter), arrived in Halifax in a sleigh drawn by four beautiful white horses.

More serious progress was achieved by the establishment of the Halifax Visiting Dispensary Society, in 1855. Since poor patients were given free treatment, one can consider this to be the first recorded free dental service treatment centre in Canada. Nova Scotia, at that time, had five dentists, all living in Halifax; New Brunswick had seven.

The most prominent dentists of this era were Lawrence and George Van Buskirk,

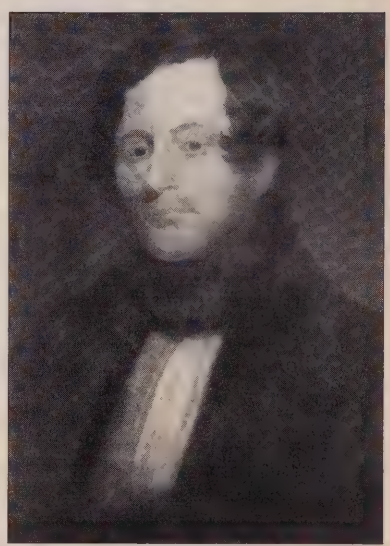


Figure 1: Lawrence Van Buskirk.

who started practicing dentistry together in New Brunswick. The more famous of the two, Lawrence, was born in Aylesford, Nova Scotia, in 1799. His father served under the King in the American Revolution and emigrated to Nova Scotia as a United Empire Loyalist. After working as a farmer in the early part of his life, Lawrence Van Buskirk began the study of medicine at Columbia University. He graduated in 1829 and established a practice in Woodstock, New Brunswick. After five years, his health deteriorated and a year of rest followed.

Figure 2: Forrest Hall housing the Schools of Law, Medicine, Dentistry and Pharmacy.

Figure 3: Dr. Arabelle MacKenzie, first woman graduate of Dalhousie Faculty of Dentistry (1918), pictured with assistants at the pre-school Dental Clinic established in Halifax following the Halifax Explosion of December 6, 1917.

Figure 4: Histology and Embryology Laboratory.

During this convalescence he studied dentistry, after which he established an office in Halifax, becoming the first permanent dental practitioner of repute in Nova Scotia. He travelled to Boston to learn how to administer the recently discovered anaesthetic, sulphuric ether. Upon his return to Halifax, he became the first person to administer it in Nova Scotia; indeed, Van Buskirk is credited as being the first man to administer an anaesthetic for a surgical operation in Canada. He is also credited as being the first Canadian dentist to subscribe, in 1839, to a dental publication, *The American Journal of Dental Science*. His portrait hangs in the foyer of Dalhousie University, Faculty of Dentistry. **(Figure 1)**

Atlantic Canada can also be credited with another dentist, Edgar Randolph Parker, better known in dental history as "Painless Parker". A graduate of Philadelphia Dental College in 1891, he returned to his native New Brunswick. He later became the greatest showman dentist ever known in North America. He drew the crowds with free shows, bands and chorus girls. Known for his claim of painless extractions, he had a man with a bugle stand behind the patient to distract him at the right moment when the tooth was being "pulled". He also is known to have inserted diamonds on the labial surface of the anterior maxillary teeth.

Organized Dentistry Comes of Age

Mainly through the efforts of C.A. Murray, from Moncton, New Brunswick proclaimed its Dental Act in 1890. The New Brunswick Dental Society, with its first president, A.J. McAvenney, from Saint John, was established in the same year.

A.C. Cogswell and John S. Bagnall were instrumental in seeing that the Nova Scotia Dental Act was passed in 1891. The same year, the Dental Act was proclaimed in Prince Edward Island. The Newfoundland Dental Act was legislated by the Colonial Government in 1893.

The first directory of dentists was published in 1909. According to the Dominion Dental Journal, there were 82 practicing dentists in New Brunswick, 114 in Nova Scotia, and 21 in Prince Edward Island. Note for comparison that in 1950, when Newfoundland joined Confederation, its population of 360,000 was served by only 17 dentists.

Formation of the Faculty of Dentistry for Atlantic Canada

Although the Nova Scotia Dental Association was established in 1891, students had to attend one of the many dental schools in the United States. An identical situation existed in the rest of Atlantic Canada.

Under the leadership of Frank Woodbury – who later became the Dean of the Maritime Dental College (1908-12) and Dean of the Faculty of Dentistry, Dalhousie University (1912-22) – the Nova Scotia Legislature, at its 1906/7 session, passed an Act establishing the Maritime Dental College. A four-year course began on September 1, 1908. Dalhousie University offered to provide the necessary lecture rooms, laboratory and clinical facilities, and to admit dental students to such classes in the Faculty of Arts and Science as the curriculum called for. A group of dentists in Halifax undertook to give the necessary dental training in the clinic located in the Forrest Building **(Figure 2)**. The Medical College agreed to teach anatomy, physiology, histology, bacteriology and pharmacology. In the winter of 1911/12, the Maritime Dental College became the Faculty of Dentistry of Dalhousie University. Its first four graduates, A.B. Crow, J.A. Burke, H.S. Tolson, and A.W. Faulkner, received the degree of Doctor of Dental Surgery, in 1912. The first female dental graduate was Arabelle MacKenzie, in 1919 **(Figures 3 & 4)**.

Dreams and wishes for more suitable quarters grew steadily under the Deanships of Dr. F.W. Ryan (1922-24), Dr. G.K. Thompson (1925-35), Dr. W.W. Woodbury (1935-47), and Dr. J.S. Bagnall (1947-54), until they became a reality when Dr. J.D. McLean became Dean of the Dental Faculty, in 1954. The first Dentistry Building was opened in 1958, a rather appropriate date because it marked the 50th anniversary of the admission of the first class of students entering the dentistry programme in Atlantic Canada.

In 1956, Dalhousie had a total of 47 dental students enrolled. Plans were also put into motion to develop a school of Dental Hygiene. The new school would accept 24 students per class in Dentistry and projected eight students per class in Hygiene. In 1956, only two faculty members were full-time; in 1970, twenty-four full-time faculty members were on staff. The students' Dental Journal was inaugurated in 1960.

The School of Dental Hygiene was started in 1961. The table clinic programme for dentistry and dental hygiene was initiated in 1962. A graduate programme in Oral Surgery was started in 1970; a graduate programme in Periodontics was initiated in 1978. In 1972, the extended duty programme for Dental Hygiene was included in Dalhousie's regular dental hygiene curriculum, the first in Canada.

In 1974, Post College Assembly, in conjunction with dental convocation, was initiated and has continued. Dr. R.H. Bingham became Acting Dean (1975-76), until

Figure 5: Forceps, for extraction of teeth; handmade steel construction, reportedly made by Paul Revere, Boston, 1770. Source of donor and acquisition date unknown.

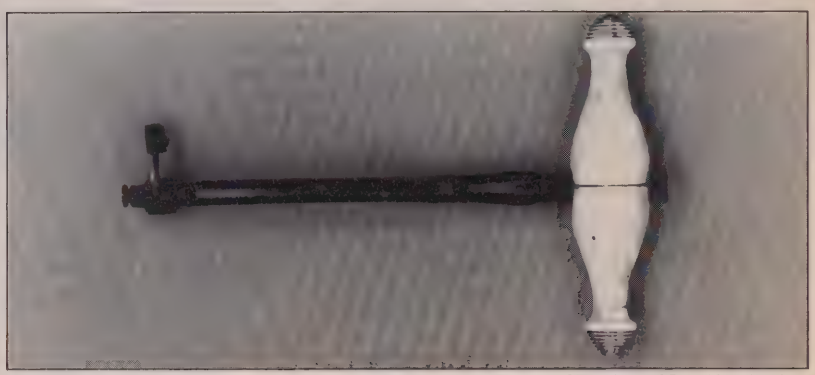


Figure 6: Turnkey, for extraction of teeth. Originally owned by Dr. Campbell of Port Hood, who received it from an old army doctor in 1899. Was in use since circa 1821. Turnkey has an ivory handle. Donated to Dalhousie Dental Museum by Dr. H.W. Black in 1946.

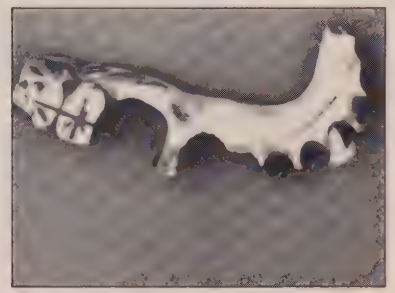


Figure 7: Bone Carved Lower RPD with natural teeth secured in by gold pins. Estimated date: 1845. Acquisition date unknown. Source: from estate of A.W. Cogswell.

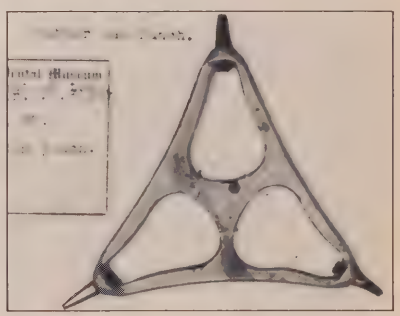


Figure 8: Rubber Dam Punch. Estimated date: 1880, acquisition date unknown. Source: Dr G Fluck

Figure 9: Facebow, circa 1900. Acquisition date 1970. Source: Dalhousie Dental Clinic

Dr. I.C. Bennett assumed the Deanship (1976 to present).

In 1981, the Faculty entered a new, modern dental complex, capable of supporting expanded undergraduate enrollment plus new dental research and graduate programs to better serve the needs of Atlantic Canada.

The Faculty also has a full-time office for continuing education which offers various programs for dentists, dental hygienists, dental assistants and technicians, either at Dalhousie or elsewhere, in conjunction with various professional associations throughout the Atlantic Provinces. The first dental refresher course was held at Dalhousie in September, 1937. During the 1983/84 academic year, 971 registered for 19 various continuing education activities given across Atlantic Canada.

Acknowledging Dentistry's Past

Since it is impossible to understand fully the present without knowledge of the past, a dental museum display area has been secured in the newly modernized and expanded dentistry building.

The museum display is placed in a prominent location in the main foyer. Thus, not only do the faculty, students, and staff have easy access to it, but also patients visiting the dental clinic can observe and acknowledge modern dentistry's debt to the profession's pioneers. The patients may note the instruments and equipment from the "good old days", and they should certainly be able to appreciate the up-to-date clinical facilities provided for their comfort.

The goal of the museum is to preserve and display the dental heritage of Atlantic Canada and to stimulate an appreciation of the collection which is designed to illustrate the history of dentistry in the region **(Figures 5, 6, 7, 8, 9, 10, 11)**.

The main items of the present display were made possible through the generous donations of Dr. H.S. Crosby, of Halifax, and Dr. E.R.K. Hart, of Sackville, N.B. Among the smaller items on display are medicaments used in a dental office around the year 1900, an 1840 turn key used to extract teeth, and a true "barn-door hinge" articulator (circa 1860), which represents the temporomandibular joints and jaw members to which maxillary and mandibular casts are attached.

We have on display a teaching contract "without remuneration". It's from May 21, 1908. It reads as follows:

> "Having received an appointment as Teacher in the Maritime Dental College of Halifax: I hereby accept the position and duties involved and as far as I am able will give the number of lectures or clinics as agreed upon without remuneration for the year 1908-09."

CONCLUSION:

On a closing note, I would like to stress that one of the prime requirements of any profession is the dissemination of knowledge and information to all its members. This can be accomplished by many different ways of communication which serves a particular need. Dr. Sperber noted this in his editorial of the Association of Canadian Faculties of Dentistry Journal where he stated that Canada's newest dental school building features not only ultra-modern and innovative facilities, but also provides space for a historical display. In his words: "this acknowledgement of modern dentistry's debt to the past pioneers of our profession is an appropriate gesture by a dental school celebrating its 75th anniversary."

After many years of hard work, a solid foundation for the profession in Atlantic Canada has been established. The progress achieved in the past serves as an encouragement for the future.

Dr. Sykora heads the Division of Removable Prosthodontics, Faculty of Dentistry, Dalhousie University, Halifax N.S. He is also the Chairman of the Faculty's Museum Committee.

Figure 10: Dental Chair, circa 1915. Acquisition date: 1974. Source: Dr E.R. Hart.

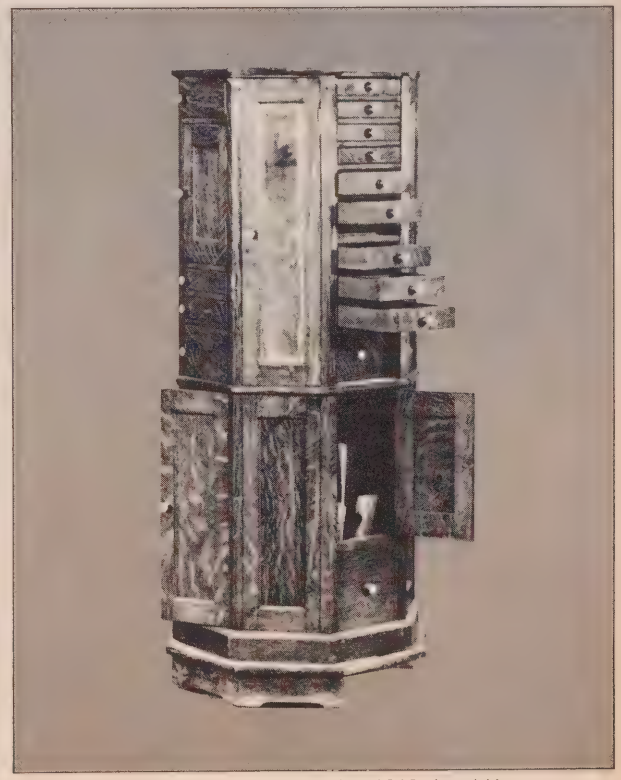
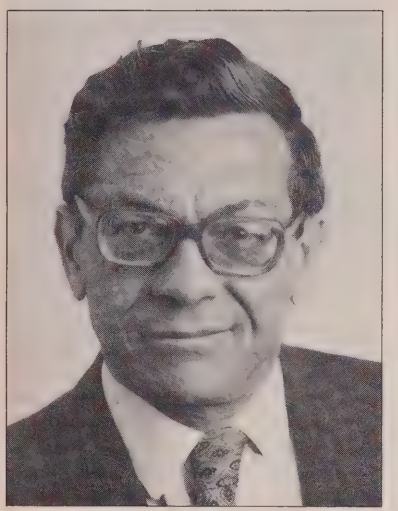


Figure 11: Revolving Dental Cabinet, circa 1919. Acquisition date: 1974. Source: Dr. E.R. Hart.

CROWNING THE ROOTS OF DENTISTRY

THE RAISON D'ÊTRE OF DENTAL MUSEUMS

G.H. Sperber
Curator, Dental Museum,
University of Alberta, Edmonton



G.H. Sperber

> *". . . . . and some there be which have no memorial; who are perished as though they had never been".*
> *Ecclesiasticus*
> *44, (Apocrypha)*

The occasion of the celebration of the 50th anniversary of the ***Journal of the Canadian Dental Association*** is an appropriate time to recognize the role of dental museums as institutions preserving the heritage of the dental profession. The conservation of the artifacts of the early beginnings of the profession is the mandate undertaken by dental museums as a crowning achievement of dentistry's barbaric and vulgar roots. By bridging the different eras of dental technical advances, dental museums preserve for posterity the rich legacy of the profession. A profession knowing nothing of its past is a profession without an identity and without a personality. A profession must look into its past to determine its future.

One of the primary objectives of dental collections is to define the historical significance, geographic region, time period, the condition of the artifacts, the function of the objects and other pertinent criteria of the collection. Historically significant objects contribute to clearer understandings or interpretations of dental perceptions, treatments, episodes and personalities of the profession. Dental museums discharge the injunction to preserve dental artifacts for future generations, to tell the story of teeth in all its protean manifestations, and to promote an appreciation for dentistry and dental health.

The word museum is derived through Latin from the Greek, mouseion – "seat of the muses" – "a place dedicated to the muses and to study, and where one engages oneself in noble disciplines"[1].

As with all museums, dental museums assemble, study, conserve and display objects of interest to the dental profession, and thereby serve as information, education and entertainment centres. Through its collections, a dental museum presents the achievements of pioneers of the profession, and reflects the societies in which they operated. Viewing examples of the craftsmanship of earlier eras can evoke wonder, amazement (and pity!) and engender latent spirits of creativity in modern practitioners of the profession.

The range of collectibles constituting a dental museum is legion, but must necessarily have a central theme of "teeth". Within that context, the diversity of objects that can be contained with that motif is exceedingly diverse, ranging from palaeontology (dental evolution) through natural history (comparative odontology) to dental therapy encompassing the whole range of technology applied to the alleviation of dental ills. This last category can include dental furniture (chairs and stools), operating lights, instrument cabinets, sterilizers, spitoons and cuspidors, x-ray equipment, bracket tables, dental drills, a whole host of operating instruments, laboratory equipment and supplies and personal dental hygiene items ranging from tooth powders and pastes to dental floss and toothpicks.

The morbid fascination of the public for the (usually barbaric) dental procedures of the past has resulted in many "heritage parks" and general museums containing dental offices of the recent past. These are often fertile sources of entertainment and amusement for the general public, but are seldom sources of serious research and preservation of dental history. These roles should be that of university museums and particularly that of dental schools that have a more acknowledged research vocation than other institutions. A further category of dental artifact collecting is encompassed by private collections, from whence many public museums originally sprang.

Dental museums are often appendages of large medical museums in company with

pharmaceutical museums. Among internationally established museums of the history of medicine that contain dental displays are those located in London (England), Washington D.C. and Johannesburg, South Africa. The world's largest medical collection is the Wellcome Museum located in the British Science Museum in London which boasts over 125,000 objects and includes an extensive dental collection of both the remote past and a portrayal of current computerized dentistry. The Smithsonian Institution in Washington D.C. contains an extensive display of Dr. Edward Angle's orthodontic workroom and study and the dental furniture and instruments of Dr. G.V. Black, besides numerous further exhibits. The Adler Museum of the History of Medicine in Johannesburg contains the original dental surgery equipment of the world's second human transplant patient, a dentist by the name of Dr. Philip Blaiberg of Cape Town. No doubt, Dr. Barney Clark's artificial heart may be displayed in some museum in the future!

The world's largest exclusively dental museum is that of the British Dental Association located at its headquarters in Wimpole Street, London, whose collection is devoted largely to the armamentaria of therapeutic dentistry. The Hunterian Museum of the Royal College of Surgeons of England in London contains probably the world's oldest odontological collection as part of the larger natural history collection of the surgeon, John Hunter (1728-1793) and is devoted to dental anatomy and pathology. In the latter field, the Armed Forces Institute of Pathology at the Walter Reed Army Hospital in Washington D.C. is unrivalled for the scope of its odontological pathology collection.

The United States abounds in dental museums, ranging from the arcane to the illustrious. A recent publication[2] lists 73 dental museums or archives scattered throughout the continental United States.

The Canadian contribution to dental museology can be divided into dental displays contained within larger historical collections depicting life in the early days of this country and dental museums contained within dental schools. There are numerous examples of the former in pioneer villages and general museums across the country, but they remain unidentified and uncatalogued as specifically dental museums. Examples of such exist in the Manitoba Museum of Man and Nature in Winnipeg, and the Fort Museum in Fort McLeod, Alberta. Some of Canada's ten dental schools do possess museum collections, but only one, the University of Alberta's Dental Museum, is listed specifically as a dental museum in the Canadian Museums Directory[3].

In most Canadian dental schools too little space, concern and budget is allocated to preserving and displaying facets of the dental profession's history. The priorities of meeting demands for clinical and research facilities place museum requirements very low on most dental schools' list of necessities[4]. Fortunately, a few enlightened schools have paid homage to their heritage by allocating space and energy to exhibit some of their history. Dental museums exist in the following Canadian dental schools:

University of Alberta

The dental museum was established in 1952 and encompasses three distinct sections: dental history, natural history and palaeoanthropology. An extensive collection of completely catalogued antique and historical dental instruments and furniture comprise the history section. A display of comparative odontology in numerous animal skulls forms the natural history section, and several dozen casts of fossil hominid remains constitute the palaeoanthropology section. The museum is currently being rehoused in a professionally designed Interpretative Display Centre in the Faculty of Dentistry, due for completion in 1986.

Examples of some of the rarer antique instruments contained in this museum are depicted in the photographs on pages 64-72.

Dalhousie University

The museum display is placed in a prominent location in the main entrance foyer of the recently modernized Dentistry building. The museum exhibits the dental heritage of Atlantic Canada and preserves the history of dentistry in the region. A turn of the century dental office constitutes the main display, along with numerous fascinating items from the school's founding in 1908. A description of this display is reported separately in this issue[5].

University of Manitoba

The dental school has been planning a museum for some time and will house a display in the coming year in the main foyer of the dentistry building to exhibit early dental equipment, instruments, literature and other appropriate items.

University of Montreal

The Faculty of Dental Medicine of the University has a museum with exhibits of old pieces of dental equipment, books, and printed articles. The museum bears the name of the founder of the Faculty and the first Dean of the dental school – Eudore Dubeau. The museum was organized in 1979 with articles donated by older dentists. No money was spent by the school to acquire these exhibits.

The most outstanding holding among the old chairs, X-ray apparatus, vulcanizers, nitrous oxide anaesthesia machines, compressors, operative instruments and books, is the original edition of Pierre Fauchard's "Le Chirurgien Dentiste", dated 1715.

Those in charge would like to exchange or loan, for a period of time, pieces from the museum. For that reason, they believe a list of the addresses of the various dental museums across Canada would be helpful.

University of Saskatchewan

The University of Saskatchewan's dental museum was developed in the summer of 1979 and located in the newly-constructed Dental Clinic Building. Appropriate large glass-enclosed showcases were made for the purpose of displaying dental museum artifacts and various items used from the late 1800s to the early part of this century.

An early dental office display consists of a dental chair, X-ray unit, sterilizer and a nitrous oxide unit. There are areas where an old X-ray unit and foot engine, circa 1912, are placed. Various older dental items and equipment are being donated from time to time from dentists, and those administering their estates. These are being catalogued and displayed.

Dr. Kenneth Epstein serves as Curator.

University of Toronto

The dental museum has a large collection most of which is currently uncatalogued and in storage. A small room adjacent to the library does display some of the extensive collection of dental equipment, artifacts and memorabilia ranging from enormous chairs and cabinets to tiny pins and photographs. Cataloguing of the collection will be undertaken in 1985, and further portions will be displayed in rotation over the years.

No doubt many dental collections have been inadvertantly omitted from this list and regrets are offered for this omission. It is hoped that a comprehensive catalogue of Canadian dental collections can be collated as a consequence of this contribution to the quinquagesimal celebration of the *Canadian Dental Association Journal*.

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50 Years of Service

DENTAL INTERPRETATION CENTRE

FACULTY OF DENTISTRY THE UNIVERSITY OF ALBERTA

Maureen Smith,
Registrar of the Centre

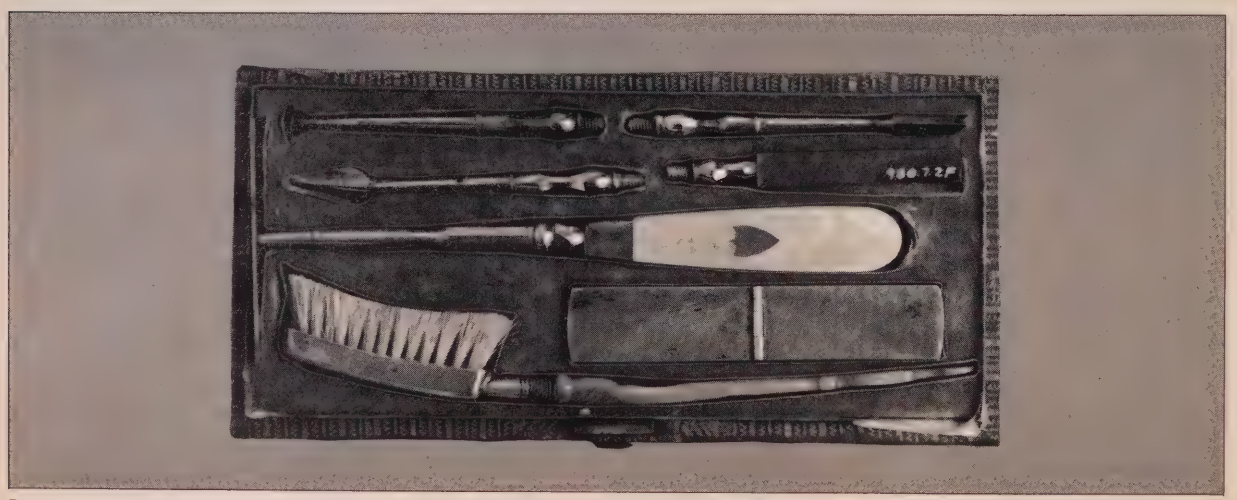
Diversity is the most striking characteristic of the Faculty of Dentistry's collections. Items are divided into the Paleoanthropology collection, the Natural History collection and the Historical Instrument collection. The objects indicate the scope of the dental profession, its history, as well as how attitudes towards dental care have changed over the centuries. Seventeenth and eighteenth century pelicans used for the extracation of teeth have been collected along with hadrosaur teeth, a narwhale tusk and the often curious devices of the earlier twentieth century dentist.

Planning for the new Dental Interpretation Centre began in the fall of 1983 to house and display the Faculty's collections, although an active collection has been maintained since the early 1950's. Along with two and three dimensional displays will be a study centre, computer terminals and access to the University's library system. The study centre will be open to Faculty, students, the general public and the dental profession at large. It will also complement the adjoining Continuing Education Centre.

Displays on Comparative Odontology and an evolutionary study of man will be featured. However, the central focus of the Centre will be the evolution of dentistry. The pioneering dentists of Alberta and how the relative youth of the province affected their practices will be given particular attention.

The projected date of completion for this unique Dental Interpretation Centre is early in 1986.

The accompanying photographs (provided through the courtesy of Ms. Frances Blondheim, Project Co-ordinator, Dental Interpretation Centre, and Professor Geoffrey Sperber, Chairman of the Interpretation Centre project), illustrate some of the notable exhibits of items and dental instruments in the Centre's collection at the University of Alberta.



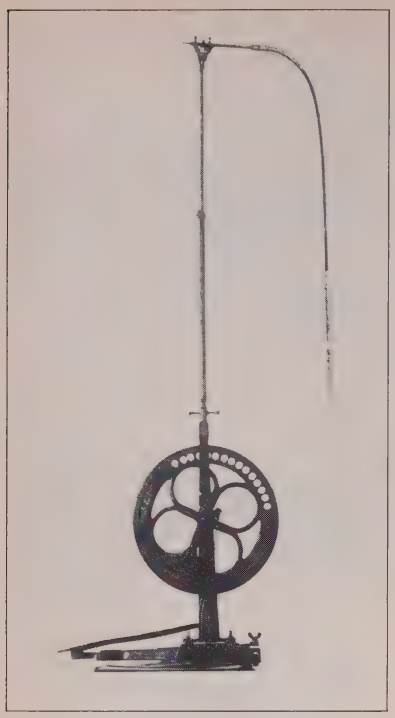
Personal dental scaling kit, French in origin, circa 1820. Made of silver and mother-of-pearl, the kit contains toothbrush, tongue scraper, toothpowder box and assorted tooth scrapers.

Manitoba's Museum of Man and Nature in Winnipeg has re-created many displays of business and professional life of the province in the early days of its history. To depict dentistry, the authorities chose to re-create the operatory of Dr. M.H. Garvin, first editor of this Journal, as it would have looked in the early 1920s. Dr. Garvin practised in Winnipeg from 1903 until 1965.

This photo depicts a portion of the Eudore Dubeau dental museum of the University of Montreal's School of Dental Medicine.

Two extraction "pelicans": one with wooden handle, circa 1620; the other, circa 1730 also has an elevator at the end. These extraction instruments, used for elevating teeth out of the jaw (without the benefit of anaesthesia!), are extremely rare.

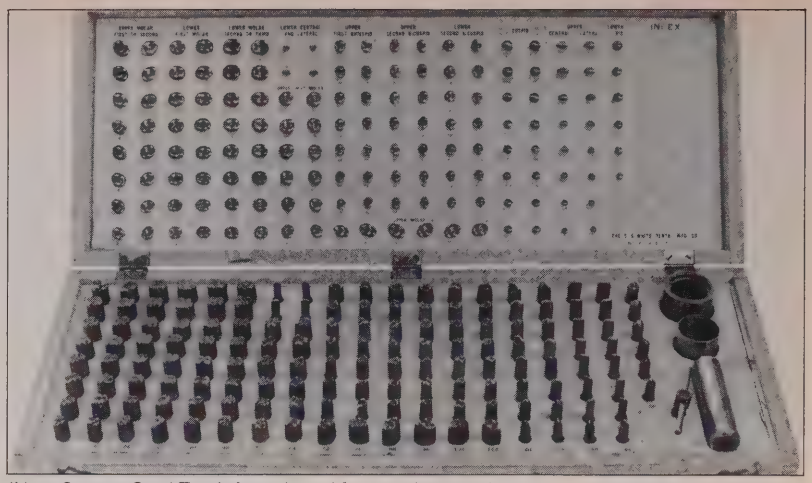
Multiple bladed scarificator. Blood-letting instrument of the 1800's (present artefact's date unknown) used for phlebotomy or artificial leeching as treatment for numerous ailments, including tooth-ache. When the lever handle on the top of the instrument was released, in contact with skin, a strong spring within the instrument drove the 16 blades deep into the skin producing profuse bleeding that was aided by 'cupping'. Heated glass cups were pressed into the cut skin, creating a vacuum as cooling occurred, stimulating haemorrhage. The screws in the instrument adjusted the strength of the spring release and the depth of the blade cuts — exquisitely refined advances in an instrument designed for bloody butchery by the physicians (not the surgeons!) of the 17th, 18th and 19th centuries.



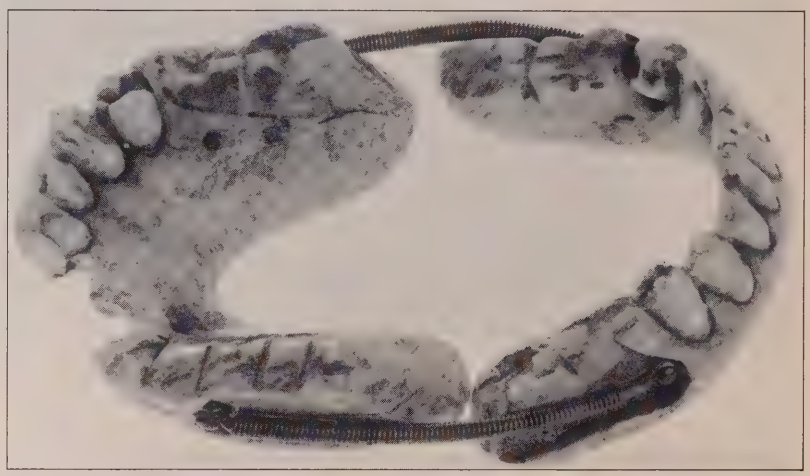
A foot-powered dental drill, circa 1880, British in origin. Invented by the American dentist, J.B. Morrison in 1871, based upon the old spinning wheel, this instrument became the "work-horse" of restorative dentistry until displaced by the electric dental engine of the 1920's. Even today, examples of this instruments are in use in rural areas of third world countries.

From the University of Alberta Dental Museum.

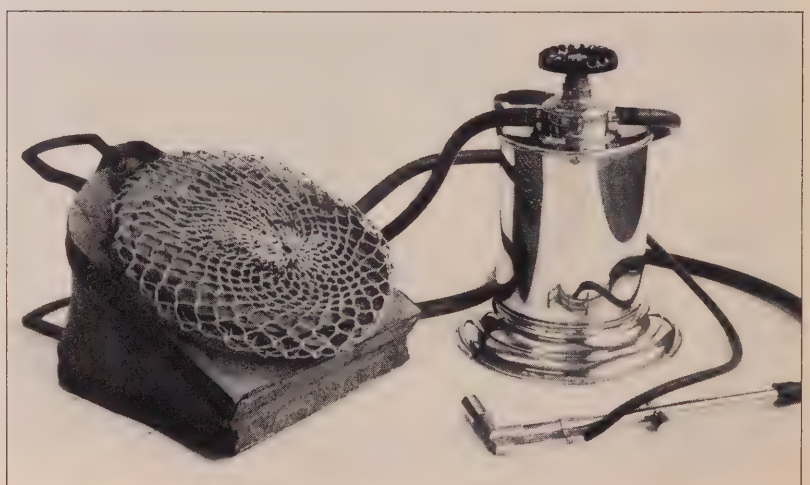
Alcohol lamp, for sterilizing instruments and heating gold foil. It is American in origin with patent dates of 1880 and 1893.



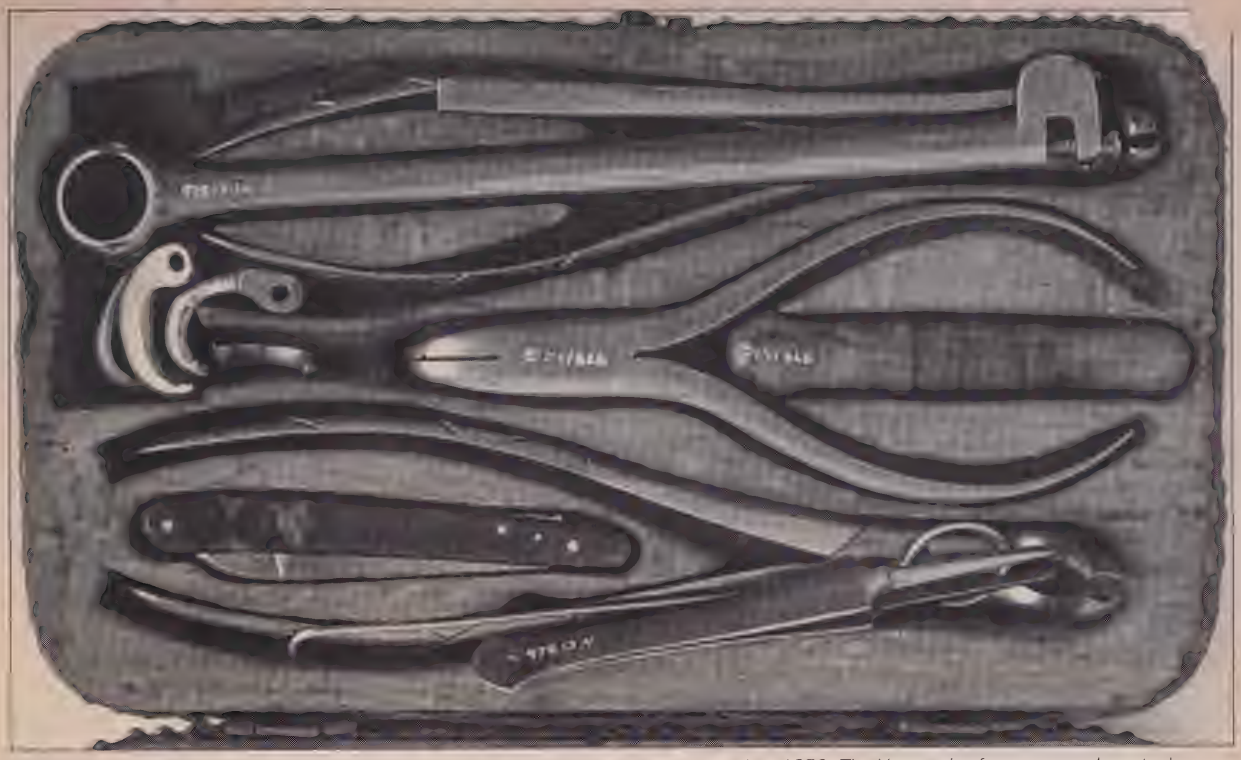
'New Century Steel Tooth forms' used for swaging metal crowns; made by the S.S. White Dental Manufacturing Company circa 1910.



Hand carved upper and lower ivory dentures, English in origin, circa 1870. The upper denture is a partial denture to accommodate two natural teeth. The anterior teeth are natural extracted teeth set in ivory bases. The posterior teeth are carved in ivory. The springs were provided to maintain the dentures in the mouth by their expansion against the jaws.



Blow torch for smelting gold, operated by foot bellows; American in origin, circa 1890.



Wooden-Cased Travelling Dental Kit, European in origin, used by an itinerant dentist, circa 1850. The kit contains forceps, gum lancet, elevator, and turnkey with five claws. The instruments appear to have been hand wrought.

A personal dental toilet kit containing a silver-handled toothbrush, an ivory-handled tongue-scraper, four dental scalers and a silver tooth powder box. French in origin. Circa 1819.

PAINLESS PARKER!

THE BEGINNING

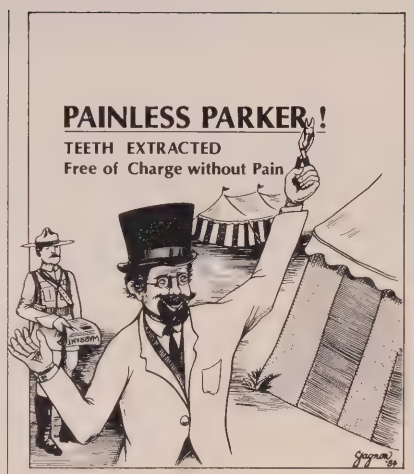
by Peter M. Pronych, BA, DDS, MS

(First North American Journal/Magazine rights only.)

Painless Parker? Yes, it is a legal name! Yes, he was a dentist and yes, he had his humble roots in Atlantic Canada! He conducted his early practice in a part of New Brunswick which is renowned for its fog, ship-building, sardine packing and the Bricklin car.

There are some who contend that Painless Parker's life was glamorous, filled with adventure, excitement, fun and action, but underlying this mantle there appears to be an element of sadness, remorsefulness, loneliness and bitterness. Members of the dental profession called him flamboyant, unprofessional, a scoundrel! He retaliated by disdainfully calling them "Ethicals". To his dying day there was no reconciliation between Painless Parker and organized Dentistry.

There are those within dentistry who applaud him as a prophet or at least exonerate him of alleged unprofessional behavior. Others feel that he was 100 years ahead of his time. Still others hold a strong view that he was a charlatan, an opportunist with a big ego masquerading under the guise of a professional. Painless Parker proudly claimed that he was responsible for taking dental education out of the confines of the dental office, and for starting associate practices. Further he contended he was the first to use *audio-analgesia and local anesthesia* in private practice. He felt that he took dentistry to the people by making it more accessible to the majority — The Henry Ford of Dentistry! Others ask what about the dental acts, the code of Ethics and



professional conduct, and the many rules and regulations which were introduced to curb the dental activities of Painless Parker and others.

His life spanned 80 years. It can be divided into three phases: (1) his youth in the Canadian Maritimes, where his particular style and promotion of dentistry were conceived; (2) his intervening years on the east coast of the United States, where his ideas and methods were refined and (3) his latter years on the Pacific coast of North America, where his style of flamboyant dentistry reached a zenith.

Information about Painless Parker has been obtained from folklore and from magazine articles written during the later stages of his life. These sources tend to be very subjective, sometimes appearing to border on incredible fiction rather than fact. Most articles from these sources were based on personal interviews with Painless Parker, who recounted events from his own perhaps coloured memories of them. Unfortunately, there is very little factual documentation concerning Painless Parker's life.

It isn't possible to cover all three phases of Painless Parker's life within the confines of this article. It seems appropriate to deal primarily with that first part of his life which was spent in New Brunswick.

Edgar Randolph Parker

Painless Parker entered this world in the year 1872, as Edgar Randolph Parker. His father, George S. Parker, of Parker and Hatfield, was a ship chandler (a dealer in supplies for ships) in the quaint little village of Tynemouth Creek, New Brunswick, near the shores of the picturesque Bay of Fundy.

Not much information is available about his childhood, except that his parents were staunch and devout Baptists and that Edgar was raised in a strict religious environment. However, this influence apparently failed to keep Edgar on the straight and narrow path when he went to school. Apparently Edgar acquired the reputation of constantly getting into trouble while at school. When Edgar reached manhood, it was decreed by his parents that he should become a preacher. This idea didn't stimulate Edgar's adrenalin very much. However, in order to please his parents he agreed to study for the min-

istry at Acadia University in the Annapolis Valley of Nova Scotia. At that time, Acadia was a Baptist University. Determined to convey a new image, Edgar attempted the life of a scholar. The new image was short lived and according to accounts Edgar regressed rapidly to his old ways. He caused some eyebrows to rise over his misplaced activities in the sedate religious environment of Acadia. His academic endeavors were brief at Acadia and he was expelled.

Edgar returned to New Brunswick where his father arranged for him to become acquainted with the business world by procuring employment for him at a friend's hardware store in Saint John. Edgar soon became disillusioned with this form of a livelihood: the work was too hard and he didn't earn enough money. He wanted adventure and excitement, there was none in stacking shelves and taking inventory. Edgar happened to be on the Saint John docks when the excitement of life on the sea called to him. He hired on as a cook on a trading schooner. The ship was no more than several hours out of port when he was rapidly demoted to deck hand when he was found to be making bread without flour. After a short time at sea, Edgar decided that the life of a sailor wasn't for him. He attempted to mend his ways and tried again to be a minister. This time he went to an old Baptist seminary at St. Martins, New Brunswick. History repeated itself and he was told to leave and never to return to the seminary.

Fearing the wrath of his parents he made his way to Moncton, New Brunswick. While wandering about, Edgar met a wholesaler who made the assessment that Edgar had the ability, style and character of a salesman. The wholesaler helped Edgar set up as a travelling merchant, complete with an old docile horse, broken down cart and a stock of household goods. Here Edgar learned about people, and how to sell. The senior Mr. Parker soon learned of his son's wayward activities at St. Martins seminary and in Moncton. Peddling was not considered to be a respectable way to make a living in the Parker household. Mr. Parker confronted Edgar and promptly auctioned off his horse, cart and goods. Edgar was literally dragged home in disgrace.

After one unhappy week at home, Edgar again ran away to sea. He worked on a sailing ship operating in the South American Trade. While recuperating in the hospital following a tropical illness he made a decision which would affect the direction of his life. While confined to bed he made the startling observation that doctors appeared to do very little but walk about in clean white coats demanding a lot of respect. He decided that he would become a medical doctor. After he left the hospital, he caught a ship going back to New Brunswick. At home, Edgar and his parents had a serious discussion about his desire to go to medical school. Wooden shipbuilding wasn't prospering and the family didn't have much money in resserve. The cost of medical education was beyond reach. Dentistry was considered a suitable alternative, as it was less expensive and the curriculum was of shorter duration.

Studied dentistry in New York

With his parents' blessing and two hundred and fifty dollars cash, Edgar set off to New York where he enrolled in the New York College of Dentistry. He began his studies, highly motivated and devoted to learning. Soon he began to run out of money. After several hungry days he pondered over the dilemma. It was inevitable that he would have to drop out of his studies if he didn't replenish his finances soon. He came upon a plan which would not only help his studies, but attend to his worldly needs as well. Drawing on the experience which he gained as a salesman, he decided that he would go door-to-door practicing dentistry. At the end of daily classes, he would gather up his dental instruments and set off to a residential neighborhood. Edgar felt that once he could get the person to open the door, he would be assured of getting inside. He only performed services that were familiar to him. When he encountered problems or situations that he couldn't handle, he would wait for that particular subject to be covered in the dental curriculum or he would go to the library and research it. He would then return at a later time and complete the procedure. Edgar not only grew very confident in his abilities but was also able to satisfy his basic needs for food and lodging at the same time. During the summer holidays, he returned to New Brunswick to earn money by going from town to town as an itinerant dentist. He became overly confident by opening a dental parlor while a student in New York City. Soon someone from the New York College of Dentistry learned of his illegal activities, his office was closed down and he was expelled in disgrace.

This devastated Edgar, as he was so close to completing his dental education. He made his way to the Philadelphia Dental College where they hadn't heard of his reputation. There he persuaded the authorities to allow him to resume his dental studies. He completed his education and was granted a diploma to practice dentistry.

As is the case of many young dental graduates, Edgar had elaborate plans for his future. He arrived at St. Martins, New Brunswick, filled with enthusiasm. However, his plans quickly dissolved due to lack of money. He had only enough to rent a vacant chair in the local barber shop and to buy a sign. He placed curtains around the chair, hung out his shingle and waited for patients. None arrived! Edgar became perplexed and began assessing the situation. It occurred to him that the reason might be the reputation that he had acquired while at the Baptist seminary. In a sternly religious little town citizens don't easily forget. He attempted to correct this negative image by joining the local parish, attending church services as often as three times each Sunday, acquiring the largest Bible, singing the loudest and sitting in the front pew.

Nothing changed. He still had few patients. Finally, he was told by a well-meaning friend that it was dentistry that people were frightened of, and not him personally.

This consoled him somewhat, though Edgar still remained perplexed. To pass the plentiful free time he would blow away on an old horn until one day he struck upon the idea that if he blew the horn on the street he could attract the attention of potential patients. He put his idea to action. Sure enough, a crowd gathered. He capitalized on the situation by making a declaration that he was the one who removed teeth and made plates. However, people didn't flock to his office. In private they complained to him about their fear of pain. Many used this as the excuse as to why they didn't go to him. Having the keen mind of a successful salesman, he hit upon the idea if he could convince people that he had a special form of treatment which was painless, then this final barrier would be removed and people would come to him for treatment. What better way to let people know of this special talent he reasoned, than to advertise it as part of one's name. Edgar Randolph Parker, the dentist, was reborn as Painless Parker, the Great Dentist! With that he set off on his adventures and what was to be the start of his destiny.

He moved to Hampton, New Brunswick, where he began to apply his former salesmanship style and methods for promoting dentistry. He was convinced that he couldn't practice in an isolated office waiting for people. As with the selling of merchandise, he decided that he would have to go to the people.

He borrowed a flat-bed wagon and put his dental chair (the former barber chair) on it. He hung huge hand-painted signs on the sides and placed the wagon in the town square. He began blowing his horn as before, to attract a crowd. When people gathered around the wagon he loudly proclaimed his ability to do painless dentistry. Keen witted Edgar leaned over the flat-bed wagon, selected a smiling face with a solitary loose tooth in the front row and with a quick jerk of the hand, victoriously demonstrated his skill. The crowd was ecstatic!

Edgar was so amazed by his own prowess that he decided it would henceforth be part of his act. However, when he tried it again, he couldn't dislodge the tooth and the person screamed so loudly that it frightened the eagerly waiting crowd away. He vowed this wouldn't happen again, so he introduced musical instruments to his troupe to mask out the noise of screams.

County fair circuit

"Edgar, the Painless Dentist" soon joined the circuit of county fairs in New Brunswick. He gaudily decorated and painted his wagon, and dressed himself in the most fashionable attire. His showmanship would always guarantee entertainment and fun. Edgar became sophisticated and refined his dentistry. He hired an advance man to precede the travelling Dentistry Show by several days to paste up posters, which heralded the approach of the "Painless Dentistry Show". The New Brunswick Museum has in its collection one of the sheets proclaiming "A grand Free Open Air Concert consisting of vocal and instrumental Music. Teeth Extracted free of charge, without pain", plus further colorful descriptions and ending with "come one and all to the tent, erected on the Cor. Union Street and Chipman Hill, opposite Odd Fellows' Hall" (in Saint John).

Once on location Edgar erected a tent next to his portable stage which was very colorfully decorated with a bill-board proclaiming his painless dentistry. The stage was bare with the exception of some wooden chairs and a worn and tired looking barber chair in the centre. In the tent was assembled an array of basic dental equipment. The tent had flaps on both ends which functioned to direct the traffic flow of those who offered themselves for the dental services – in one end and out the other. Edgar hired staff who would function in several roles, such as the dental technician. He doubled as one of the members of the band (example of the first expanded duties), while others shared with other duties around the caravan.

According to individuals who witnessed the performances, Edgar's Dentistry Show was always assured of attracting large crowds. His showmanship ability and the experience he gained as a salesman were his most valuable assets. His band consisted of drums, a cornet and a banjo. The musicians would assemble and perform on stage at appointed times. The colorful clothes and lively music not only attracted the people but put them in a festive, excited mood. One could almost feel the anticipation of the crowd building as the band played on. At just the right moment Edgar would triumphantly emerge from the side, dressed in the finest top hat, silk shirt and breeches complete with vest and spats. A white lab coat was casually draped over his resplendent frame. On stage, Edgar's sharp sparkling eyes were constantly searching the crowds for possible candidates who would contribute to the success of the show. According to spectators who actually witnessed his performance he looked magnificent, his fastidiously trimmed van dyke added the final touches to his self confident image. After quieting the cheering and noise, he would parade proudly around the stage proclaiming the virtues of dentistry, ending his sales pitch for dentistry by making an offer: for 50 cents anyone could have a tooth extracted, or for slightly more, a plate made. He would then guarantee, to the disbelieving gasps of the audience, if anyone experienced any pain, he would pay that person five dollars. If a volunteer wasn't forthcoming from the crowd, he would select an unsuspecting spectator with a rotten-tooth smile and urge the crowd to help the person toward the stage.

Once the anticipatory mass of humanity produced its victim, Edgar would usher his prospective patient to the barber chair. Here a quick oral examination would be conducted in a very showmanlike way, and the prospective abscessed tooth or root tip for "painless" extraction would be identified. Edgar would wave his arms about and the band, which was situated on both sides and at the back of the usually unwilling patient, would strike up one of its loudest numbers. Deafened by the loud music the countenance of the patient would change from fear to total bewilderment, shock and numbness. At a precise moment, Edgar would quickly snap his hand down and from a little pouch hidden in his sleeve out would pop a tiny forcep. He completed the motion by raising his hand over the patient and abruptly thumping the patient on the chest with the palm of his other hand. This apparently accomplished two things, it drove the wind out of his patient's lungs and forced the patient to open his mouth. Instantaneously and instinctively, the other hand dove into the victim's mouth and came out holding a tooth. The forcep was quickly hidden. Edgar would then parade around the stage holding the tooth in his hand. Any sounds made by the victim at that time were effectively muffled by the loud music and the screams and cheers of the crowd.

After the performance Edgar would leave the stage and proceed directly to the tent to begin his dental practice in earnest. Long lines of people formed up in front of the tent to experience the "painless dentistry".

There are conflicting reports as to the painless dentist's ability. Some people who had extractions done by Edgar reported it was almost dream-like with no discomfort at all. Others complained bitterly of the excruciating pain during and after the extraction, the humiliation and the long term after-effects of persistent infection. However, these were common occurrences during those early days of Dentistry.

Police scrutiny

Edgar continued with his travelling Dentistry Show throughout New Brunswick in the late 1800s, until at the urging of some disgruntled patients and dentists within the area, the authorities began to question him about his unorthodox methods and techniques, his motives, his advertising and practicing dentistry in a public place. The travelling show soon acquired another faithful spectator, a representative of the law trailing closely behind, usually closing down the show by serving Edgar with a warrant. The wagon, tent, stage and Edgar would quietly fade into the fog and next morning he and his show were nowhere to be found. Under the veil of darkness Painless Parker, the great dentist, had moved to another location. Soon, Edgar ran out of towns in New Brunswick. The persistence of the local authorities forced him to leave New Brunswick and he worked his way across Canada with his travelling Dentistry Show to the west coast and then to Alaska during the gold rush days. He always appeared to be one step ahead of the authorities who patiently followed him.

Edgar left New Brunswick an embittered man with the feeling of being betrayed by his public whom he tried to help, and by the dental profession of which he was a member. He felt misunderstood and his actions and motives misinterpreted.

He developed a strong animosity toward the dental profession who he perceived were hostile to him and who were constantly threatening his form of livelihood.

He left Canada in 1896 at the age of 24 and moved to the United States where he expanded his unconventional dental activities, always one step ahead of the authorities. But it was in New Brunswick that his flamboyant style of dentistry was conceived, partially out of necessity and partially out of opportunity in a time when dentistry was in its infancy.

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(Personal experiences, news items, or clippings concerning "Painless Parker" could be sent to the author. This information will aid the author in compiling a more complete file for future articles and perhaps a book. Any assistance will be gratefully received and acknowledged.)

DENTAL PUBLIC HEALTH

ITS ORIGINS AND DEVELOPMENT IN CANADA

R.E. Feasby, DDS, DDPH
Toronto, Ont.

In Canada the origins of the specialty of Dental Public Health can be traced to the introduction of post-graduate courses in Dental Public Health at the University of Toronto in 1946 and at the University of Montreal in 1951. By 1962 forty-six dentists had been granted Diplomas in Dental Public Health by the two universities.

Most of these Public Health Dentists worked with government agencies or universities. They corresponded and met frequently at Conventions of the Canadian Dental and Canadian Public Health Associations. From their discussions came a decision to seek national recognition of the specialty by the CDA. Five Provincial licensing authorities had already recognized the specialty. The formation of the Royal College of Dentists of Canada added further impetus to the possibility of national recognition.

Public Health Dentists in several provinces including British Columbia, Alberta and Ontario had organized and were holding regular meetings. In 1966 the Ontario Society of Public Health Dentists prepared and circulated a draft constitution for a national society of Public Health Dentists. As a result an application was made to the Canadian Dental Association for the establishment of a specialty section in Dental Public Health and the recognition of Public Health Dentists as specialists.

In 1967, the Canadian Dental Association approved provisional section status but deferred specialty recognition. This was necessary because the previous year, the CDA had placed a moratorium on recognition of specialties beyond those already certified; namely, Orthodontics, Oral Surgery, Periodontics and Paedodontics. There was concern with the proliferation of applications for specialty recognition and possible splintering of the profession without serving the best interests of the public.

The Canadian Society of Public Health Dentists held their first meeting during the 1967 Convention of the CDA. Sixty-five Public Health dentists had joined the Society, and were designated as Charter Members.

CDA recognition in 1973

After lengthy consideration of the general question of specialists in dentistry and the particular qualifications for specialists in Dental Public Health, the CDA recognized the specialty in 1973. This was the culmination of eight years of persistent effort by members of the Society.

Since the inaugural meeting, the Society has held annual meetings at the time of the CDA conventions and in concert with the other specialty sections has worked closely with the Association. Canadian clinicians as well as others from outside the country have been jointly sponsored for Section Meetings and General Sessions of the CDA. Members of the Society have served on Association Councils and Committees, especially those concerned with promotion of health, prevention of disease and extension of dental treatment to all members of the community.

The Society has been active in the preparation of briefs on dental care. Examples include submissions to the CDA in 1968 of proposals for inclusion in the CDA Children's Dental Care Plan and to the Canadian Public Health Association with respect to a Policy Statement on Public Health Practices in Canada. Representatives of the Society participated in the development of the CDA Career Training Model in 1975.

Criteria were developed for minimum requirements for Dental Public Health Training Programs with approval of the requirements given in 1978.

Substantial progress has been made with the application of the World Health Organization's methodology for the collection of dental health data to develop National Dental Indices. Provincial indices have been produced for more than two decades by the governments involved in dental services. The present objective is to have comparability of the information gathered, thereby providing a reliable basis for evaluation of existing methods of care and for planning future activities.

Public Health Dentists occupy senior positions in municipal, provincial and federal governments and in Canadian dental faculties. Their responsibilities include: teaching, research, administration of dental care programs and advice on funding arrangements.

Now has 108 members

The Society currently has 108 members and is represented in RCD(C) by 32 Fellows and 7 Members.

The University of Montreal and the University of Toronto offer training programs leading to qualification in the specialty. By 1984, a total of 198 dentists had completed post-graduate courses with the major proportion of them assuming positions in Canada; however, a significant number were trained on behalf of foreign governments and universities.

The stated object of the Society is, "to advance the art and science of Dental Public Health, and by its application, maintain and improve the dental health of the public."

With the co-operation of dentists and dental auxiliaries in private practice and the recipients of dental care, much progress has been made toward providing optimum dental care for the total community.

FÉDÉRATION DENTAIRE INTERNATIONALE MEMBERSHIP

Membership in the Fédération Dentaire Internationale for 1985 is now open for new or renewed membership. Supporting membership from Canada and attendance at the Helsinki Congress was significant and it is hoped that such support will continue. After the March 1985 issue, only those who renew their membership will continue to receive the Newsletter and in addition, it is necessary to be a supporting member to attend the outstanding Congress planned for Belgrade, Yugoslavia on September 21-27, 1985.

Registrants to FDI world congresses must be supporting members of the Federation. To be eligible for supporting membership, Canadian dentists must be members of the Canadian Dental Association.

The subscription fee is $35 (Canadian) or in combination with a subscription to the International Dental Journal $60 (Canadian). We urge you not only to become a member but to encourage your colleagues to join as well.

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[1] Sveen, O.B.; Jensen, O.: "A Twenty-Four Month Evaluation of Pit & Fissure Sealants." Unpublished data. Available upon request.

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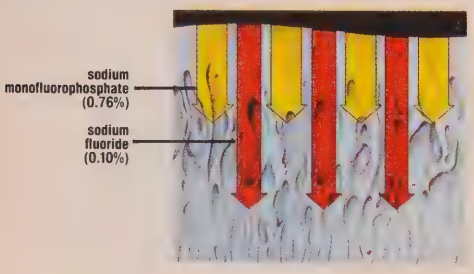

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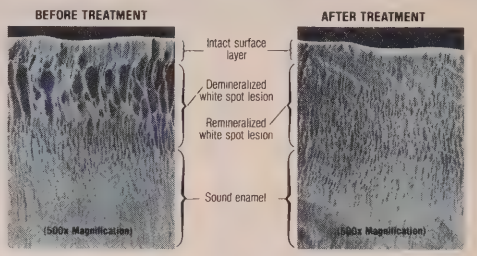

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†Colgate Toothpaste contains sodium monofluorophosphate and sodium fluoride which are, in our opinion, effective decay preventive agents and are of significant value when used in a conscientiously applied program of oral hygiene and regular professional care. Canadian Dental Association

PARTNERS IN PREVENTIVE DENTISTRY.

PROSTHETIC STATUS

AND NEEDS OF THE ELDERLY IN QUEBEC

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SUMMARY

An epidemiological study was conducted among people aged 65 and over in the Province of Quebec, in order to determine their oral health and prosthetic status and the association between their perceived and diagnosed needs. The data are based on the participation of 1,822 individuals who agreed to answer a questionnaire and to undergo a clinical examination. Full upper dentures are worn by 78.6 per cent of the population of Quebec aged 65 and over, and lower dentures by 65.6 per cent. Only a small percentage wear a partial upper (5.8 per cent) or partial lower denture (6.1 per cent). Three-quarters (74.1 per cent) of all dentures are at least five years old. Only 45.7 per cent of full and partial upper dentures and 37.6 per cent of lower dentures were judged satisfactory by the examiners. Furthermore, it was found that more women than men wear full dentures. The data also demonstrated that when the level of education and income is higher, the percentage of full-denture wearers is lower.

SOMMAIRE

Une étude épidémiologique a été effectuée chez les personnes de 65 ans et plus du Québec dans le but de déterminer la condition de la santé bucco-dentaire, l'état prothétique et la relation entre les besoins de traitements ressentis et diagnostiqués. Les résultats découlent de la participation de 1,822 personnes qui ont accepté de répondre à un questionnaire et de passer un examen clinique. 78,6 pour cent des Québécois âgés portent une prothèse complète supérieure et 65,6 pour cent une inférieure. Peu cependant sont porteurs d'une prothèse partielle supérieure (5,8 pour cent) ou inférieure (6,1 pour cent). Les trois-quarts (74,1 pour cent) des prothèses datent de 5 ans et plus. Seulement 45,7 pour cent des prothèses complètes et partielles du haut et 37,6 pour cent du bas ont été jugées adéquates par les examinateurs. Les femmes recourent plus que les hommes aux prothèses complètes. Le port de prothèses complètes diminue, règle générale, proportionnellement à l'augmentation du degré de scolarité et du niveau du revenu.

INTRODUCTION

An epidemiological study was conducted in the Province of Quebec in 1980 among people aged 65 and over to determine their oral health and prosthetic status, perceived and diagnosed treatment needs and recourse to services. The association of the findings with sociodemographic factors was then examined.

A separate article deals with oral health status and needs in general. This article will focus on prosthetic status, to which special attention was paid in view of the very high proportion of denture wearers among the elderly.

MATERIAL AND METHODS

The survey methods are described in an accompanying article. To summarize, a probability sample survey of 2,145 individuals was taken from the 569,375 Quebecers aged 65 and over, 1,822 of whom agreed to be interviewed and clinically examined, for a response rate of 84.9 per cent.

A two-level stratification was used: first by region – metropolitan, urban, semi-urban and rural – and then by place of residence – private residence, nursing home or hospital. The frame was obtained by randomly selecting 10 local areas, and in each area individuals from the electoral lists and from the nursing home and hospital registers.

The poll, which over-represented the number of old persons living in home care and hospital institutions in order to obtain detailed information, was weighted according to the provincial distribution, to give a sample of individuals representative of the elderly population in the Province of Quebec. The final weighted population is composed of 93.0 per cent of the sample living in private residences, 4.4 per cent in nursing homes and 2.6 per cent in hospitals.

RESULTS

Prosthetic status

In view of the high rate of edentulousness (72 per cent), a large proportion of Quebecers wear full dentures, 78.6 per cent an

TABLE I

Age of latest denture (full or partial) (weighted sample)

Age of protheses	Upper denture (N = 1538)	Lower denture (N = 1306)
0 – 4 yr	22.2 %	24.0 %
5 – 9 yr	13.6 %	13.9 %
10 – 29 yr	45.2 %	46.2 %
30 + yr	18.9 %	16.0 %

TABLE II

Breakdown of how much upper and lower dentures are worn (weighted sample)

	Upper dentures (N = 1538)	Lower dentures (N = 1306)
Day only	28.0 %	34.7 %
Day and night	64.9 %	51.6 %
Occasionally	4.3 %	6.2 %
Never	2.9 %	7.5 %

TABLE III

Breakdown of need for prosthetic treatment to upper and lower arches (weighted sample)

	Upper arch (N = 1822)	Lower arch (N = 1822)
None	39.2 % (684)	29.5 % (507)
New full denture	50.3 % (877)	53.8 % (924)
New partial denture	7.5 % (131)	13.7 % (236)
Repair	2.9 % (52)	3.0 % (52)
Missing data	(78)	(103)

TABLE IV

Distribution of full denture wearers according to various sociodemographic variables (weighted sample)

	Variables	Number	Full upper denture		Full lower denture		Upper & lower dentures	
Quebec		1822	78.6 %		65.6 %		64.7 %	
Region	Metropolitan	774	78.8 %		70.8 %		69.0 %	
	Urban	466	78.1 %		64.3 %	**	63.9 %	*
	Semi-urban and rural	582	78.6 %		59.8 %		59.7 %	
	Missing data	(0)						
Sex	Male	873	73.5 %	**	59.5 %	**	58.9 %	**
	Female	949	83.2 %		71.2 %		70.1 %	
	Missing data	(0)						
Age	65-74 yr	1182	80.3 %		66.5 %		65.8 %	
	75-84	530	74.8 %		63.8 %		62.3 %	
	85 +	107	77.9 %		64.1 %		64.1 %	
	Missing data	(2)						
Education	0-4 yr	316	74.4 %		63.0 %		63.0 %	
	5-7	768	84.7 %	**	69.6 %	**	69.3 %	
	8-12	598	75.1 %		63.0 %		61.0 %	
	13 +	111	64.3 %		58.5 %		56.8 %	
	Missing data	(29)						
Income	$ 0-349	686	82.5 %		68.6 %		68.1 %	
	350-499	759	78.8 %	**	66.1 %		65.3 %	
	500-999	171	79.5 %		64.6 %		64.6 %	
	1,000 +	29	47.0 %		47.0 %		47.0 %	
	Missing data	(177)						

* if $\varrho \leq 0.05$ (chi-square test)
** if $\varrho \leq 0.01$ (chi-square test)

TABLE V

Adequacy of removable dentures by age (weighted sample)

Age of protheses	Upper dentures (N = 1538)		Lower dentures (N = 1306)	
	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory
0 – 4 yr	75.6 %	24.4 %	60.2 %	39.8 %
5 – 9 yr	60.6 %	39.4 %	44.4 %	55.6 %
10 – 29 yr	39.0 %	61.0 %	32.3 %	67.7 %
30 yr and over	17.1 %	82.9 %	12.5 %	87.5 %
Total	45.7 %	54.3 %	37.6 %	62.4 %
	χ^2 = 129,427		χ^2 = 63,370	
	α = 0,000		α = 0,000	

upper one and 65.6 per cent a lower one. However, only a very small percentage wear a partial upper (5.8 per cent) or partial lower denture (6.1 per cent).

As seen in **Table I**, nearly three-quarters (74.1 per cent) of prostheses, whether upper or lower, full or partial, are at least five years old, and almost half (45.2 to 46.2 per cent) are 10 to 29 years old.

Denture wearers who never or only occasionally wear their appliances were found in a proportion of 7.2 per cent (upper) and 13.7 per cent (lower) (**Table II**).

Diagnosed Prosthetic Needs

The data in **Table III** show that half of elderly Quebecers are in need of new full dentures – 50.3 per cent an upper and 53.8 per cent a lower denture. A small proportion of the total population need new partial dentures – 7.5 per cent an upper and 13.7 per cent a lower. These percentages are important as only 18.2 per cent of old people have upper teeth and 26.4 per cent lower ones. So almost half of the dentate population is in need of new partial dentures. Only 3 per cent of all dentures, both upper and lower, are in need of repair. Preprosthetic surgical treatment is required by 6.2 per cent of Quebecers.

DISCUSSION

Distribution of full-denture wearers according to various sociodemographic variables

As seen in **Table IV**, significantly more women than men wear full dentures, whether upper or lower or both. Wearing both full upper and lower dentures and full lower prostheses is more common among those living in metropolitan areas than among those living in urban, semi-urban and rural areas. As a general rule, the higher the level of education and income, the smaller the proportion of some categories of denture wearers. Age had no effect on the wearing of dentures.

Adequacy of dentures

Only 45.7 per cent of full and partial upper and 37.6 per cent of lower dentures are classified as satisfactory by the examiners, regardless of place of residence, whether private residence, nursing home or hospital.

As shown in **Table V**, the older the removable upper dentures, the more unsatisfactory they are, varying markedly from 24.4 per cent for dentures 0-4 years old to 82.9 per cent for those 30 years old or more.

As seen in **Table VI**, poor fit is generally the main problem. This is especially prevalent among hospitalized patients (57.6 per cent) as compared with those living at home (40.4 per cent) or in nursing homes (37.3 per cent).

Perceived need for replacement or repair by age of most recent denture

Data in **Table VII** illustrate the perceived need for denture rehabilitation. The older the upper dentures, the more they are perceived as needing replacement; from 18.7 per cent for those 0-4 years old, the proportion gradually rises to 41 per cent for those 30 years old and older. Only a very small percentage of dentures are in need of repair, probably because of the high need for replacement, since the one precludes the other.

The proportion of lower dentures in perceived need of replacement is high, climbing from 33.6 per cent for dentures less than five years old, to 42.7 per cent for those 10-29 years old, up to 48.2 per cent for appliances 30 or more years old. As with upper dentures, little need for repair was found.

Comparison with other studies

In the accompanying article, comparisons were made with the data cited by other researchers.[1-5] These comparisons pointed out the limitations of comparing studies by different researchers using different methodologies.

With the same reservation, it is interesting to note that a smaller proportion (64.7 per cent) of full denture wearers, upper and lower, was found among elderly Quebecers than in Denmark by Christensen[2] (74 per cent), in Finland by Mäkilä[3] (men, 67.8 per cent, women 68.5 per cent), in Norway by Rise and Helöe (67 per cent)[4] and in Great Britain by Smith and Sheiham[5] (74 per cent).

All of the above authors commented on the great need for prosthetic treatment among the elderly. Grabowski and Bertram[1] found "only 28.2 per cent of the edentulous persons (among elderly) did not need treatment", whereas Christensen[2] noted "the need for prosthetic treatment includes 87 per cent in the old-age group". According to Mäkilä,[3] "an analysis of all the 297 wearers of removable dentures revealed that 290 (97.6 per cent) of them had something wrong with their dentures." Rise and Helöe[4] noted that "most of the prostheses were unsatisfactory". Smith and Sheiham[5] observed that "only 10 per cent of the full denture wearers had appliances which were both satisfactory" as to fit and retention. The same situation is found among elderly Quebecers since 70.4 per cent of them are in need of prosthetic treatment.

TABLE VI

Breakdown by problem and place of residence

	Home (N = 492)	Nursing home (N = 311)	Hospital (N = 165)	Weighted sample (N = 1000)
Poor fit	40.4 % (199)	37.3 % (116)	57.6 % (95)	40.7 % (407)
Unaesthetic	6.9 % (34)	4.5 % (14)	1.2 % (2)	6.7 % (67)
Poor articulation	10.2 % (50)	10.0 % (31)	8.5 % (14)	10.1 % (101)
Other	2.6 % (13)	7.7 % (24)	4.2 % (7)	2.9 % (29)
At least two problems	39.8 % (196)	40.5 % (126)	28.5 % (47)	39.6 % (396)

χ^2 = 35,552
α = 0,000

TABLE VII

Perceived replacement or repair of dentures by age of latest prostheses (weighted sample)

	Denture replacement/repair					
	Upper (N = 1538)			Lower (N = 1306)		
Age of prostheses	None	Replacement	Repair	None	Replacement	Repair
0 - 4 yr	78.3 %	18.7 %	2.4 %	61.8 %	33.6 %	4.6 %
5 - 9 yr	66.1 %	31.9 %	1.9 %	63.3 %	33.4 %	3.3 %
10 - 29 yr	62.3 %	35.3 %	2.3 %	54.4 %	42.7 %	2.9 %
30 yr and over	54.2 %	41.0 %	4.8 %	47.7 %	48.2 %	4.0 %
		χ^2 = 26,027			χ^2 = 9,264	
		α = 0,000			α = 0,159	

CONCLUSION

The number of full denture wearers is very high among the elderly in Quebec. As a great proportion of the prostheses are five years old and more, the majority of them present at least one serious problem. Even if this situation is comparable with that observed in other countries, it remains unacceptable that the elderly ignore in such a way the prosthetic dental services.

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1. Hechter, F.J. Symmetry and dental arch form of orthodontically treated patients. JCDA 44:173-184, 1978.

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2. Kilpatrick, H.C. Work simplification in dentistry, ed. 2. Philadelphia, Saunders, 1964.13

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PÉRIODONTITE JUVÉNILE

UNE APPROCHE DE TRAITEMENT CONSERVATRICE

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Québec, Qué.

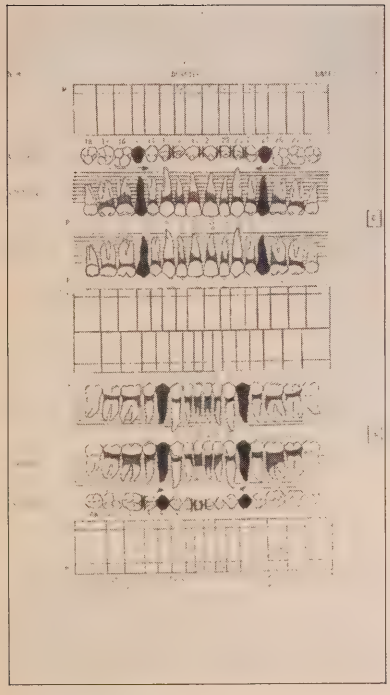

Tableau 1. Diagramme péridentaire montrant les différentes profondeurs des crevasses et des poches péridentaires enregistrées lors de l'examen clinique.

RÉSUMÉ

Le traitement de la périodontite juvénile présente un défi important pour le périodontiste. Ce rapport clinique traite d'un cas-type de périodontite juvénile qui a été traité par de l'aplanissement de racines, du curetage gingival et par un contrôle rigoureux des mesures d'hygiène. A un moment donné du traitement, une antibiothérapie a été utilisée. Les différentes phases du plan de traitement y sont discutées de même que le choix de l'antibiotique et les résultats obtenus.

ABSTRACT

The treatment of juvenile periodontitis is a great challenge for the periodontist. This clinical paper deals with a typical case of juvenile periodontitis which was treated by root-planing, gingival curettage and strict control of oral hygiene. At one point during the treatment antibiotherapy was used. This paper discusses the various phases of the treatment plan as well as the choice of the antibiotic used and the results achieved.

INTRODUCTION

La périodontite juvénile reste encore mystérieuse pour la profession dentaire mais de plus en plus, la recherche nous rapproche de son étiologie possible. Un des problèmes fut sa classification dans la catégorie des maladies inflammatoires ou des maladies dégénératives (périodontose). Les recherches entreprises ces dernières années ont tenté d'identifier son étiologie.

Revue de la littérature

Waerhaug[1,2] rapporte un haut degré de corrélation entre la localisation de la lésion active sur les dents atteintes et l'étendue apicale de la plaque sous-gingivale. Récemment le terme périodontite juvénile a été largement accepté. Newman et Socransky[3] proposent une étiologie bactérienne pour cette maladie. Ils ont été capables d'isoler un plus grand nombre de bâtonnets anaérobiques gram négatif des régions de destruction osseuse que des régions normales des patients. La flore sous-gingivale des lésions de la périodontite juvénile est composée en grande partie de Capnocytophaga, de Bactéroïdes mélaninogénicus, d'Actinobacillus actinomycetemcomitans et d'autres organismes gram négatif. Une étude de Cianciola et al.[4] a démontré la présence de leucocytes polymorphonucléaires ayant une réponse chimiotactique et phagocytaire diminuée. Ils posent l'hypothèse que les organismes décrits par Newman et al. pourraient produire des facteurs qui affectent les leucocytes polymorphonucléaires.

Figure 1. Photographie clinique lors de la première visite. On note une bouche propre avec peu de débris ou de dépôts calcaires. Présence de diastèmes au niveau antérieur supérieur et inférieur.

Figure 2. Apparence clinique de la région antérieure inférieure. Une sonde péridentaire est en place indiquant une profondeur de 8 mm.

D'autres investigations parlent d'une réponse immunitaire cellulaire diminuée, d'une base génétique et même d'une relation avec les groupes sanguins.

Genco et al. [5] rapportaient récemment que la précipitation d'anticorps à l'Actinobacillus actinomycetemcomitans était commune chez les patients avec une périodontite juvénile localisée, mais pas chez les personnes qui avaient d'autres maladies péridentaires ou chez les personnes péridentairement en santé. Dans ce rapport, les auteurs émettent l'hypothèse que les anticorps agissent comme des protecteurs, ce qui a pour effet de localiser la maladie dans la périodontite juvénile. Cette hypothèse suggère que la périodontite juvénile est une maladie infectieuse, contre laquelle l'hôte peut développer un système de défense effectif du type immunité humoral.

La périodontite juvénile dans sa forme classique[6] est une maladie de l'adolescent dans laquelle des individus entre douze et vingt ans approximativement démontrent une perte rapide de l'os alvéolaire de support habituellement autour des premières molaires et incisives permanentes. On y retrouve une inflammation clinique minimum, peu de plaque bactérienne supragingivale, de tartre ou de douleurs.

Présentation du cas

Une jeune patiente de dix-sept ans se présente à notre bureau référée par son orthodontiste; sa plainte principale est que ses dents commencent à se déplacer et qu'elles sont mobiles. De plus, elle se plaint de douleur légère dans la région antérieure, inférieure et supérieure.

Histoire médicale et dentaire

La patiente, une jeune fille de race blanche, se présentait pour une évaluation péridentaire et pour des traitements. L'histoire médicale ne révèle aucune condition systémique contribuante aux problèmes péridentaires.

La patiente avait suivi un traitement d'orthodontie majeur et par la suite, elle a été placée en rétention pour un peu plus d'un an. Quelques mois après la fin de la rétention, la patiente a noté que ses dents commençaient à se déplacer (apparition de diastèmes) et celles-ci sont devenues mobiles.

Examen clinique et radiologique

À l'examen clinique on note une bouche propre avec peu de débris ou dépôts calcaires (**fig. 1**). Le nombre de restaurations est faible et celles-ci ne sont pas extensives. Dans les sextants postérieurs, le tissu gingival présente de l'inflammation marginale et la papille mésiale des molaires inférieures est légèrement cyanotique. Au niveau antérieur supérieur et inférieur, on remarque la présence de diastèmes. Le tissu gingival est rouge, oedémateux et à la pression un exsudat purulent sort de la crevasse gingivale pathologique (**fig. 2**). Le tissu kératinisé ne présentait pas de problèmes mucogingivaux. Le sondage fut exécuté (six mesures par dent) et les poches péridentaires les plus profondes étaient localisées dans la région des incisives inférieures et dans la région des premières molaires inférieures. La mobilité à travers la bouche (avec une échelle de 0 à 3) variait de +, 1, 1+ excepté pour les inci-

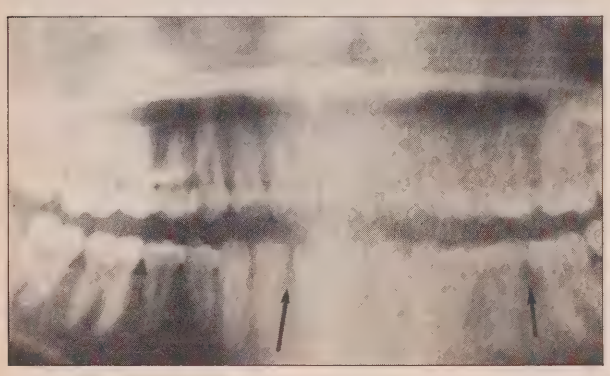

Figure 3. Radiographie panoramique prise avant le traitement d'orthodontie. On note un début de résorption osseuse au mésial de la dent #36 et dans la région #41 et 42 (flèche).

Figure 4. Radiographie panoramique prise trois ans et neuf mois après celle apparaissant à la figure 3. On y note une grande différence et on peut voir la rapidité avec laquelle la destruction osseuse s'est produite.

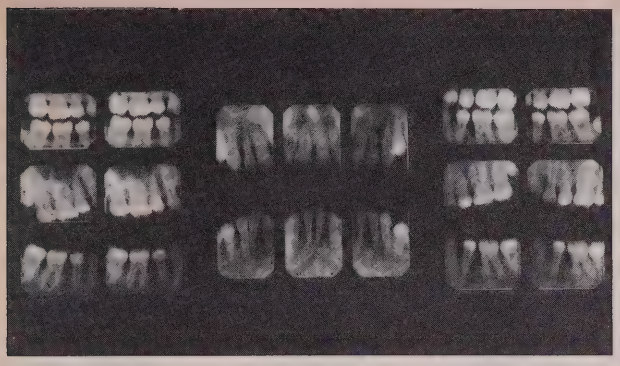

Figure 5. Bouche complète de radiographies périapicales prises avant de débuter les traitements et montrant de la résorption osseuse dans la région antérieure et dans les régions de la première molaire supérieure et inférieure.

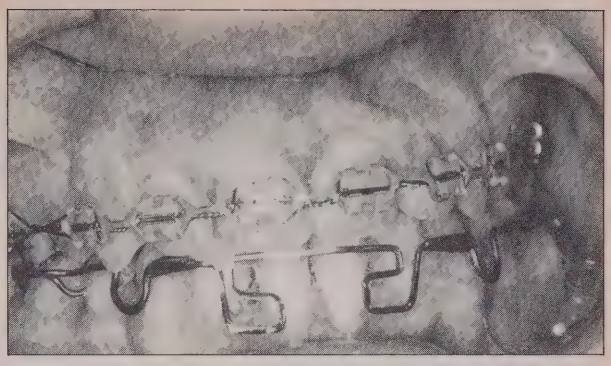

Figure 6. Appareil fixe au maxillaire supérieur et appareil amovible au maxillaire inférieur pour refermer les diastèmes.

sives centrales inférieures qui présentaient une mobilité de 3 (**tableau 1**).

Du point de vue radiologique, on note à la **figure 3**, que sur cette radiographie panoramique au mésial de la dent #36, il y a début de résorption osseuse. Dans la région des incisives inférieures, l'image radiologique est floue, mais il semble que l'os alvéolaire soit plus radiotranslucide entre les dents #41 et #42. Sur la radiographie panoramique suivante (**figure 4**) prise lors d'un examen de contrôle chez l'orthodontiste, soit trois ans et neuf mois après la première radiographie, on peut voir la grande différence qui existe et la rapidité avec laquelle les lésions osseuses ont progressé. On voit de la perte osseuse sévère au niveau mésial des dents #26, #36 et #46, de même qu'au niveau des incisives supérieures et inférieures.

Pour plus de précision et de clarté, une bouche complète de radiographies périapicales fut prise (**figure 5**). Celle-ci nous donne une meilleure définition et un meilleur contraste surtout dans la région antérieure. On note au niveau des racines des dents antérieures de la résorption radiculaire assez marquée. On peut aussi observer la sévérité de la destruction osseuse dans la région antérieure inférieure. Les dents #31 et #41 ne tiennent plus que par leur apex. Au niveau de la dent #46 (1e molaire inférieure droite), on a une forme de résorption caractéristique de la périodontite juvénile, soit une destruction en forme d'arc[7] qui s'étend vers le distal en passant par le lingual. La furcation linguale de la #36 (1e molaire inférieure gauche) peut être sondée. D'après un article de Harvey[8], le cas présent pourrait être classifié comme une classe I puisqu'il représente le cas classique de périodontite juvénile, c'est-à-dire atteinte de une ou de toutes les premières molaires permanentes et atteinte des dents antérieures.

Plan de traitement

Après la collection des données, nous avons décidé de procéder dans un premier temps d'une manière très conservatrice. La première étape consistait à une réévaluation de la méthode de brossage et les instructions d'hygiène d'usage. Par la suite, chaque sextant a été traité par de l'aplanissement de racines et par du curetage gingival sous anesthésie locale, le tout complété par une prophylaxie dentaire. Quatre rendez-vous furent consacrés à ces traitements.

Peu après, la patiente fut référée à un orthodontiste dans le but de replacer les dents qui s'étaient déplacées depuis la fin de la rétention post-orthodontique. Celui-ci traita le maxillaire supérieur (**figure 6**) avec des appareils fixes et le maxillaire inférieur avec un appareil amovible. Six mois après le début du traitement d'orthodontie, la patiente était revue dans le but d'éliminer du tissu hyperplasique présent du côté palatin; ceci dans le but de permettre à l'orthodontiste de placer un appareil de maintien amovible.

Comme procédure chirurgicale, nous avons exécuté une gingivectomie palatine pour éliminer le tissu hyperplasique, mais non dans le but d'avoir accès à l'os sous-jacent ou de corriger les défauts osseux présents au palatin. Après la guérison, un appareil de maintien amovible avec un fil labial fut fabriqué pour le maxillaire supérieur. Suite au traitement d'orthodontie, du meulage sélectif fut fait.

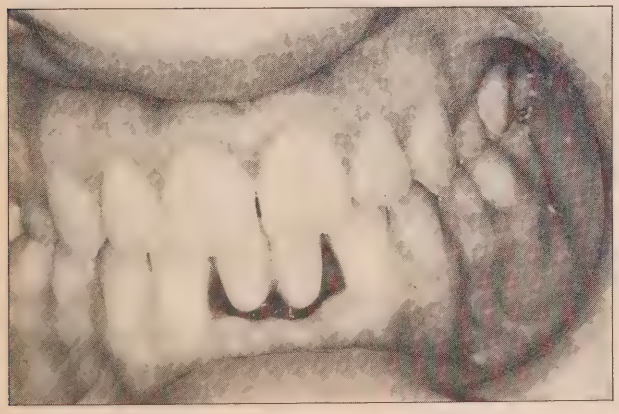

Figure 7a. Vue buccale de jumelage extra-coronaire mis en place pour remplacer les dents #31 et 41.

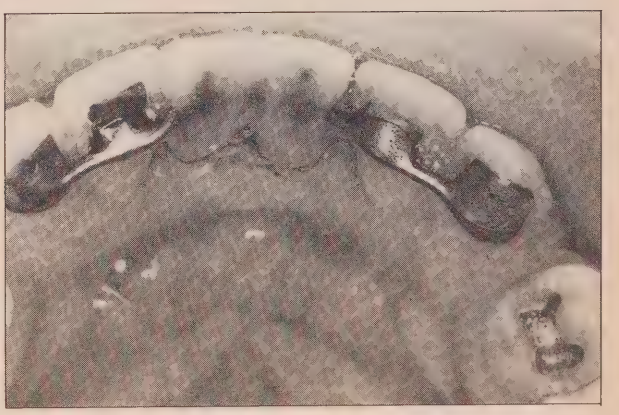

Figure 7b. Vue linguale du jumelage extra-coronaire qui a été attaché aux dents adjacentes par la méthode du etching.

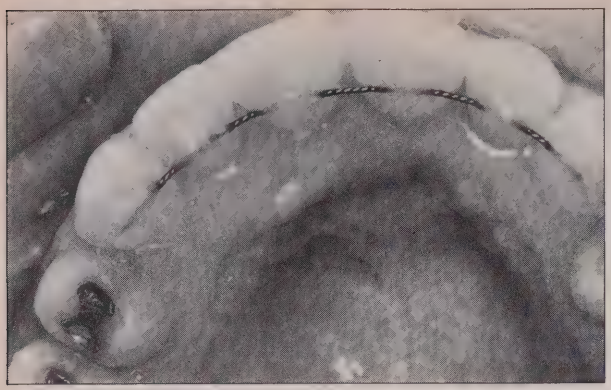

Figure 8. Vue palatine du jumelage extra-coronaire des dents antérieures postérieures.

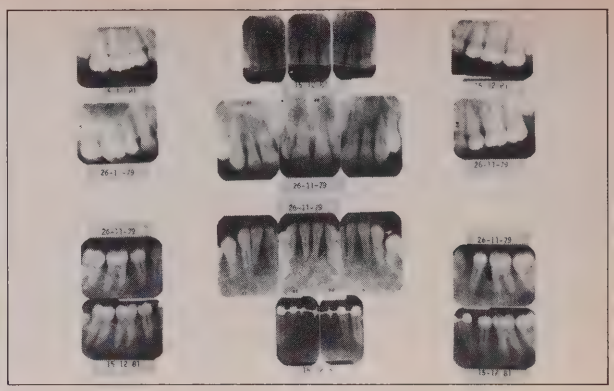

Figure 9. Comparaison des radiographies prises au début du traitement et deux ans après. On note une différence marquée du niveau osseux dans les régions atteintes de périodontite juvénile.

À ce stade, nous avons décidé de faire extraire les dents #31 et #41 (incisives centrales inférieures gauche et droite) qui ne répondaient pas au traitement avec persistance d'exsudat purulent, poches péridentaires profondes et mobilité. Un jumelage extra-coronaire (**figure 7a** et **b**) avec la méthode du etching fut mis en place au lingual des dents antérieures inférieures avec deux dents en acrylique cuit pour remplacer les dents extraites (#31 et #41). Une réévaluation du reste de la bouche nous démontrait une amélioration de la condition péridentaire avec diminution légère de la profondeur des poches.

C'est alors que nous avons décidé d'employer une antibiothérapie pour une période de cinq jours. L'antibiotique choisi[9,10,11,12] fut la spiramycine 250 mg et la dose était de une capsule aux six heures. Deux mois après la prise de l'antibiotique, l'on notait une réduction significative de la profondeur des poches. De plus la patiente nous signalait qu'elle sentait ses tissus plus fermes et qu'elle avait l'impression que ses gencives se resserraient autour de ses dents.

Plusieurs évaluations ont eu lieu par la suite et toutes présentaient de l'amélioration. Il faudrait rappeler que cette patiente était vue très régulièrement pour l'évaluation de sa méthode de brossage et pour du détartrage et prophylaxie dentaire.

Comme dernière étape, nous avons demandé que l'appareil amovible supérieur soit remplacé par un jumelage extra-coronaire placé au lingual des dents antérieures supérieures (**figure 8**). Ceci permettrait à la patiente de mieux nettoyer cette région.

RÉSULTAT

Deux ans après le début des traitements et environ un an après la prise de l'antibiotique, des radiographies périapicales de contrôle furent prises (**figure 9**). On peut noter une différence marquée du point de vue osseux avec celles prises au début du traitement. On voit que certains défauts osseux ont été comblés et de plus on note la réapparition de la lamina dura. Du point de vue des crevasses gingivales, elles présentent une profondeur normale de 1 à 3 mm. À la **figure 10a** et **b**, on peut voir des pointes de Hirschfeld en place et leur correspondance radiologique. On peut retrouver une crevasse de profondeur normale et on voit que la pointe bloque à environ 2 mm. de la crête alvéolaire. Ceci pourrait correspondre à la zone biologique décrite par Gargiulo et al.[13] pour permettre à l'épithélium de jonction et à l'attachement des fibres supraalvéolaires de se reformer et de se réattacher à la dent. Les diastèmes antérieurs ont été refermés et les dents sont maintenues en place par des jumelages.

Choix de l'antibiotique

Pour ce qui est du choix de l'antibiotique la spiramycine, il a été fait suite aux succès rapportés par différents thérapeutes pour traiter les maladies péridentaires. La pharmacologie du médicament nous apprend qu'il est surtout actif contre les bactéries à gram positif. Les organismes gram négatif y sont en général beaucoup moins sensibles.[10] La spiramycine est facilement absorbée au niveau du tube gastrointestinal et est partiellement excrétée dans les urines et la bile de même que dans la salive.[11] Il a la propriété de persister en plus grande concentration dans les tissus que dans le

Figure 10a. Pointes de Hirschfeld placées au mésio-buccal et au lingual de la première molaire inférieure droite.

Figure 10b. Correspondance radiologique des pointes de Hirschfeld de la figure 10a.

sérum et pour une plus longue période de temps. La spiramycine a la propriété d'être retenue dans l'os alvéolaire et les glandes salivaires majeures permettant ainsi la concentration du médicament dans les régions traitées. Il y a aussi une excrétion prolongée du produit après que son administration a cessé.[14,15,16]

Turnbull et al.[10] rapportent que Denks et al.[17] ont étudié la concentration de la spiramycine dans le fluide de la crevasse gingivale. Deux jours après le traitement à la spiramycine, des échantillons de salive, de sang veineux et de l'exsudat gingival furent obtenus de patients qui présentaient une périodontite marginale progressive. Les résultats montraient que la concentration effective de l'antibiotique n'atteignait pas la cavité buccale seulement par son élimination via les glandes salivaires majeures mais aussi à travers l'exsudat de la poche gingivale.

Des échantillons de fluide à partir de la crevasse gingivale montraient une concentration dix fois supérieure de spiramycine à sa concentration dans la salive et dans le sang veineux.

Mills, Thompson et Beagrie[12] ont comparé la spiramycine, l'érythromycine et un placebo en ce qui a trait à leur efficacité pour contrôler les maladies péridentaires. Leurs résultats indiquent une tendance en faveur de la spiramycine dans la plupart des paramètres examinés. Ceux-ci émettent l'hypothèse qu'il est possible que la grosseur moléculaire de l'ingrédient actif de la spiramycine soit plus petite que l'érythromycine, permettant ainsi à la spiramycine d'être présente dans le fluide de la crevasse gingivale et de produire un effet bénéfique additionnel.

DISCUSSION ET CONCLUSION

Le cas présenté dans cet article n'étant qu'un cas clinique, on ne peut que formuler certaines hypothèses qui auraient pu se produire pour donner les résultats obtenus.

On retrouve dans la littérature[18,19,20] plusieurs études qui démontrent un changement dans la flore des poches péridentaires après du détartrage et de l'aplanissement de racines sous-gingival. Leurs résultats indiquent une diminution des bactéries sous-gingivales gram négatif anaérobiques et une augmentation des gram positif. Slots et al.[19] dans une étude ou le traitement initial consistait en deux à trois visites pour détartrage, aplanissement de racines et instructions d'hygiène sur une base périodique et dans certains cas, une antibiothérapie (tétracycline), quelques espèces de microorganismes ne sont pas réapparus à leur niveau initial même après un intervalle de six mois après la thérapie.

Dans le cas présent, nous ne croyons pas que l'antibiotique soit le grand responsable de la guérison de la patiente; la diminution des poches péridentaires serait plutôt due à la diminution de l'inflammation dans les tissus et la reconstitution du collagène gingival qui se produit suite à l'aplanissement de racines, au curetage gingival et aux mesures d'hygiène rigoureuses suivies par la patiente. De plus, le réalignement de certaines dents et leur stabilisation a sûrement contribué à changer l'environnement péridentaire.

L'hypothèse que l'on peut émettre sur l'antibiothérapie serait que les changements de la flore buccale au niveau des poches péridentaires produits lors de l'aplanissement de racines et du curetage gingival, amèneraient la spiramycine à agir lors de la recolonisation des poches péridentaires par les gram positifs en ne permettant pas à ces bactéries de s'organiser, augmentant ainsi le potentiel de guérison du patient en assurant à celui-ci un meilleur environnement. Une autre hypothèse serait qu'en diminuant la population de gram positifs sur laquelle la spiramycine est efficace, on coupe une source de nutrition possible pour les bactéries gram négatif et par le fait même, on a une recolonisation moins rapide.

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Depuis la soumission de cet article, en septembre, 1982, Mouton et al[21] ont publié un article important qui traite de la sensibilité des bactéries à potentiel parodontopathique à la spiramycine. Le lecteur est fortement encouragé à consulter cet ouvrage.

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Announcements

FEBRUARY/FÉVRIER

February 1-2: A national conference on The Dental Caries Decline – Implications For Private Practice and Public Health Programs, Montreal, Canada. The conference is co-sponsored by the Canadian Dental Association and the Continuing Dental Education Committee of the Faculty of Dentistry, McGill University. For registration contact: Mrs. Olga Chodan, McGill University, Continuing Dental Education, 740 Doctor Penfield, Suite 416, Montreal, Quebec H3A 1A4, (514) 392-4921.

February 20: 29th annual culminating meeting of the American Academy of Occlusodontia, Chicago Marriott Hotel, Chicago Ill. Contact: Dr. Steve Pearl, 1500 Shermer, Northbrook, Ill. 60062 USA.

February 21-24: Chicago Dental Society's 120th Midwinter Meeting, McCormick Place. Chicago Dental Society, 30 North Michigan Ave., Chicago Ill., 60602. Telephone (312) 726-4076.

February 22-23: Alberta Academy of Periodontics seminar, Westin Hotel, Edmonton, Alberta. Topic "Periodontics: The Backbone of Comprehensive Dentistry" presented by Dr. Gerald M. Kramer. Contact: Dr. E. Brown, Secretary Treasurer, Alberta Academy of Periodontics, 505-1333 8th St. S.W., Calgary, Alta., T2R 1M6, 403-244-3363.

MARCH/MARS

March 14-16: Greater Houston Dental Meeting. Contact: JoAnne Ingles, Administrative Secretary, 7000 Fannin, 2290 Doctor's Centre, Houston Texas. 77030, 713-790-9690.

March 31–April 3: Convention '85, College of Dental Surgeons of British Columbia. Featuring a complete scientific program, exhibits, table clinics and social events. Hyatt Regency, Vancouver. Contact: The College of Dental Surgeons of British Columbia, Suite 801, 750 Jervis St., Vancouver, B.C. V6E 2A9, 604-681-5226.

APRIL/AVRIL

April 12-14: Society of University Dental Instructors, presents Seventeenth International Conference, Queen's University, Belfast, Ireland, Dunadry Inn Hotel, Templepatrick, Co. Antrim. Contact: J.S. Leckey, SUDI, Room 312, School of Dentistry, Grosvenor Road, Belfast, BT12 68P.

April 18-21: Medic Asia, an exhibition of medical, hospital and dental equipment, Singapore. Contact: The PR Department, INTERFAMA PTE LTD., 1 Maritime Square, #12-05, World Trade Centre, Singapore 0409.

MAY/MAI

May 2-4: Second International Congress on Dental Implantology and Biomaterials, Hotel Inter-Continental, San Diego, CAL. Information: Clifford J. Kirschner, Executive Director, The International Congress of Oral Implantologists, P.O. Box 2277, Grand Central Station, New York, New York, 10163. Telephone (201) 783-6300.

May 2-5: Alabama Implant Congress XI, Birmingham Alabama. Contact: Alabama Implant Study Group, P.O. Box 4682, Birmingham Alabama, USA 35206.

May 3-5: American Association of Dental Consultants sixth annual spring workshop, Marriott Long Wharf Hotel, Boston Massachusetts. Contact: Dr. Samuel S. Hirson, c/o Dental Service Corporation, 100 Summer St., Boston Massachusetts 02106 USA.

May 11-13: Canadian Academy of Periodontology and Ontario Society of Periodontists joint meeting. Clinicians: Drs. Herman Corn, Mick Dragoo, George Zarb; Chairman: Dr. Anthony Melcher. Contact: Dr. Ken Hershenfield, 5 Fairview Mall Dr. Suite 210, Willowdale, Ont. M2J 2Z1.

May 12-17: 24th Congress of the Australian Dental Association, Brisbane Australia. Contact: Congress Secretariat, P.O. Box 29, Parkville, Victoria, 3052.

JUNE/JUIN

June 12-16: Saskabush. Western Canada Dental Society Convention, Saskatoon, Saskatchewan. Contact: Dr. Keith Hamilton 306-374-7272.

June 22-29: Yukon Dental Association, Summer Convention '85, Kluane National Park, Contact: Dr. John Stern, 3089 3rd Ave., Whitehorse, Yukon, Y1A 5B3.

JULY/JUILLET

July 3-5: Bermuda Dental Association 1985 Convention. Guest speakers include Dr. Ron Jordan from the University of Western Ontario. Contact: Dr. Robert Gibbons, Erin, Paget 6-20, Bermuda, 809-296-4477.

SEPTEMBER/SEPTEMBRE

September 27-29: Canadian Academy of Endodontics annual meeting, Ottawa Ontario, Four Seasons Hotel, Contact: Dr. Lorne Chapnick, 2200 Yonge St., Suite 1009, Toronto, Ont. M4S 2C6.

September 29–October 2: Canadian Dental Association national convention, Ottawa, Ontario, at Canada's Capital Congress Centre, contact: CDA, 1815 Alta Vista Dr., Ottawa, Ont. K1G 3Y6.

DECEMBER/DÉCEMBRE

December 5-10: 12th Asian Pacific Dental Congress, Bankok, Thailand. Contact: Conference Travel of Canada, Inc., 102 Bloor St., West, Suite 620, Toronto, Ont., M5S 1M8, 416-922-8161.

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Further particulars and application forms may be obtained from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H OPF, England, or from the Appointments Unit, Secretary's Office, University of Hong Kong, Hong Kong. Closing date: *31 January 1985*.

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Dalhousie University is an equal opportunity employer, but in accordance with Canadian immigration regulations, this advertisement is directed to Canadian citizens and permanent residents.

Interested persons should send curriculum vitae and direct inquiries to:

Dr. F.W. Lovely, D.D.S., M.S., F.R.C.D., F.I.C.D.
Professor and Chairman
Department of Oral & Maxillofacial Surgery
Faculty of Dentistry
Dalhousie University
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SITUATIONS VACANT

UNIVERSITY OF ALBERTA

Applications are invited for a full-time academic appointment as a Teaching Fellow for a duration of at least one year in the Division of Diagnosis. This position is ideal for anyone completing a Hospital Residency Program with the intent of pursuing a career in academics as an interim before continuing with further graduate education. It would similarly be suitable to anyone with clinical experience who also plans to commence a graduate program the following year as it would allow an early return to scholarly activity.

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All inquiries should be forwarded by May 1st, 1985 to: Dr. C.G. Baker, Chairman, Department of Stomatology, Faculty of Dentistry, University of Alberta, Edmonton, Alberta, Canada T6G 2N8. (403) 432-2403.

BOARD OF GOVERNORS
NOTICE OF MEETING

The Interim Meeting of the Board of Governors of the Canadian Dental Association will be held on March 8-9, 1985 (Friday and Saturday respectively) at the Four Seasons Hotel, Ottawa, Ontario, commencing at 9:00 a.m. on March 8.

It is brought to your attention that meetings of the Board of Governors are open to all members of the Association.

The Board is composed of twenty-five governors, representing members across Canada on a 1 to 500 ratio. The Canadian Forces Dental Services and Student members are represented by one member each.

The governor(s) representing your area are:

ALBERTA:

Dr. E. F. Allison
55 – 1812, 4th St. S.W.
Calgary, Alta. T2S 1W1

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68 Clarendon Road N.W.
CALGARY, Alberta T2L 0P3

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Vancouver, B.C. V6K 2G4

Dr. R. J. Markey
6180 Blundell Rd., Ste. 210
Richmond, B.C. V7C 4W7

Dr. T. Ramage
1506 – 805 W. Broadway
Vancouver, B.C. V5Z 1K1

Dr. John G. Silver
Faculty of Dentistry
University of British Columbia
2199 Wesbrook Mall
Vancouver, B.C. V6T 1Z7

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633 Lodge Avenue
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SUPPORT FOR DENTAL RESEARCH IN PERIL?

The fabric of dental research in Canada has always been very fragile.

It is fragile because it has a vulnerable financial base.

Yet the quality of that research has gained Canada an enviable reputation. Bright young Canadian dental researchers have attracted the attention of the world. Canadian dental faculties and the quality of dental education in this country, bask in the glow of their achievements.

In academic circles, however, there is renewed concern about research funding. Most of the necessary financial support has come from the federal government. Efforts to reduce the federal deficit may also reduce the funds available for research in the health sciences.

There are reports that the federal finance minister may remove the tax incentives enjoyed by firms contributing to research funding. There has been government criticism of "duplication and waste" in university-based research. There have been murmurings that industry and the private sector should be providing a greater share of research funding. In the past, the Medical Research Council, which receives and considers applications for grants, periodically was advised of supplementary funding, above the initially-announced totals each year. Now, researchers anticipate that MRC may even be required to justify existing funding.

Among the health science disciplines competing for grant monies, dentistry has never enjoyed a high profile. Only about three per cent of this federal funding has gone to dental research projects (an average of recent years). Yet, in the relatively recent past, dental research has been the most cost-effective public health research conducted in this country. The most outstanding example is the research that has resulted in an approximately 60 per cent reduction in dental caries in the last decade. All of this is largely attributable to the application of findings of dental research. Certainly, the savings to the nation and its people far outweighs the cost of the research.

At this point in time, there is a clear need for research into problems such as periodontal disease. Dental problems consume about six per cent of the nation's health budget, yet it is not likely that corresponding research funding will be obtained without the strong support provided by an informed public.

If research funding is, in fact, reduced significantly, and fewer fellowships are available, it will not be possible to attract capable researchers in the years ahead. A prominent dental educator and researcher warns that "a whole generation of young, promising people, who could make a great contribution to public health in Canada," could effectively disappear.

Canada is already woefully short of talented people in some specialized areas. Reduced support for research could accelerate this problem with a renewed exodus to the United States – commonly referred to as the "brain drain."

The medical profession is somewhat insulated from such reductions in funding. In medicine, much of the funding necessary for research in specialty fields is available from a myriad of groups or foundations such as the Cancer and Arthritis Societies, the Heart Foundation – and many other very familiar support agencies.

In this respect, dental research is an orphan. (There is, however, a glimmer of hope that such a dental research support group could materialize down the road, as a result of the deliberations of a working committee being established at the invitation of the MRC and the federal health and welfare department, and chaired by a Canadian dentist and academic of international stature).

More than half of the research funding in this country is provided through the Medical Research Council (federal funds). The remaining 45 per cent comes from provincial health ministries, the Alberta Heritage Fund (for researchers working in that province), and a limited amount from industry and the Canadian Fund for Dental Education (CFDE).

In the lean economic climate of the moment, industry and even provincial governments cannot be expected to step up their level of funding to cover a shortfall in federal government support. Let us hope that this shortfall does not materialize.

Health sciences should never be considered solely as a cost item. A significant breakthrough in cancer research would very rapidly obscure the dollar signs and admonitions of conscientious accountants. And a breakthrough in periodontal research would alleviate a great deal of suffering and substantially reduce public health costs in this country.

Reduction of the federal deficit is an urgent concern, which we do not dispute. But in addressing this concern our legislators should not lose sight of the potential of public health research.

Clarence Metcalfe
Associate Editor

News Update

NEW GROUP ESTABLISHED TO REVIEW DENTAL RESEARCH

A working group has been convened, at the invitation of the Medical Research Council of Canada and Health and Welfare Canada, to study the status of dental research in this country.

Internationally renowned Canadian dentist, researcher, academic and administrator Dr. John B. Macdonald, has agreed to serve as chairman of the working group. Serving with him are Professor Barry C. McBride of the Faculty of Dentistry, University of British Columbia; Dr. Edwin H.K. Yen, Faculty of Dentistry, University of Manitoba; Dr. Donald W. Lewis and Dean Richard Ten Cate, of the Faculty of Dentistry, University of Toronto, and Dr. A. Demirjian, Faculty of Dentistry, University of Montréal.

In addition to a review of the status of dental research in Canada, the committee's mandate states that recommendations will be made to Health and Welfare Canada and the Medical Research Council and the 10 Canadian faculties of dentistry, concerning priorities, funding and organizational arrangements to sustain a viable program of dental research in Canada.

The group has been requested to file its report by March 31, 1986.

The initiative that resulted in the establishment of the new group began about three years ago, when an ad hoc committee was convened, consisting of the 10 dental deans, representation from the Canadian Dental Association, the Association of Canadian Faculties of Dentistry and the Canadian Association for Dental Research. The chairman of that group was Dr. Richard Ten Cate, Dean of Dentistry, University of Toronto. Much of this group's activity was lobbying for recognition of the need to address concerns about the status and future of dental research in Canada.

The chairman

Dr. Macdonald, the chairman of the new working group, is a DDS graduate of the University of Toronto (1942), who also holds a PhD in Bacteriology from Columbia University, and saw service with the Canadian Dental Corps during the Second World War.

Following his war service, Dr. Macdonald served as Chairman of the Division of Dental Research and became Professor of Bacteriology at the University of Toronto. Later he was Professor of Microbiology at Harvard University's School of Dental Medicine, and was consultant to the Dental Medicine Section of the Corporate Research Division of the Colgate-Palmolive Company. Later, he served as director of Post-Doctoral Studies at Harvard School of Dental Medicine. In 1962, he was Consultant in Bacteriology at the Forsyth Dental Infirmary.

From 1962-67, Dr. Macdonald was President of the University of British Columbia, and for the following two years was Consultant; Science Council and Canada Council, in support of Research in Canadian Universities. He was also Chairman, Commission on Pharmaceutical Services, Canadian Pharmaceutical Association, in 1967 and Consultant, National Institutes of Health, 1968.

From 1968-74 he was Executive Director of the Council of Ontario Universities and Professor of Higher Education, University of Toronto, in 1968.

More recently, Dr. Macdonald served as President of the Addiction Research Foundation.

He has been an editor of dental and research publications, Chairman of the National Scientific Planning Council, a member of the Canadian Dental Association, the International Association for Dental Research, the Canadian Mental Health Association, the New York Academy of Sciences, American Society of Microbiologists, the Pacific Region Board of Directors, Canadian Council of Christians and Jews, and has served as Honorary Director, Muscular Dystrophy Association of Canada and Honorary Vice-President, the Canadian Red Cross Society.

Dr. Macdonald has been awarded honorary degrees from universities across Canada and the United States.

MONTREAL AREA DENTIST DIES AFTER STRUGGLE WITH ROBBER

Dr. Guy Poissant, 32, died as a result of gunshot wounds suffered in a struggle with a robber in his clinic in St. Hubert, a suburb of Montréal, early in November.

The young dentist, a graduate of l'École de médecine dentaire de l'Université de Montréal in 1981, accosted the criminal when he tried to take his secretary hostage, and make off with about $400.

As the dentist struggled with the armed man, several patients in the waiting room, including a woman and her two children, sought refuge in a washroom and other available hiding places.

The frustrated thief fired three close-range shots at the dentist. He was wounded in the chest and the left arm.

Dr. Possant died about an hour later in a Montréal area hospital.

He was an active member of the Canadian Dental Association.

Dr. Poissant operated a dental clinic at 5245 Boulevard Cousineau, in St. Hubert.

UNIVERSITY OF MANITOBA'S SYMPOSIUM 26 HIGHLY SUCCESSFUL

The University of Manitoba, Faculty of Dentistry, combined a scientific symposium, "Symposium 26" with a homecoming weekend, November 9-10, 1984.

The Symposium featured Dr. Brock Love speaking on "Dynamic Tissue," Dr. Gary Hyman, delivering the J. R. Trott Memorial Lecture, entitled "Current Status of the Management of Teeth with Furcation Involvements", Dr. Murray Vimy on "Dental Amalgam: Poison in Your Mouth?", and Dr. Mike Suzuki on "An Innovation and Renovation in Resin and Restorative Dentistry." All speakers were University of Manitoba dental alumni. Between 200 and 250 interested Faculty of Dentistry alumni attended the scientific sessions over two days. The symposium was held at Winnipeg's International Inn.

On November 9, following the morning's scientific presentation, a short memorial service to the late Dr. H. W. Hart, one of the Faculty's first professors and a distinguished member of the Manitoba dental profession, was held. Dr. Brock Love, one of Dr. Hart's many former students in attendance, delivered a short tribute, while the eulogy was delivered by Dean Emeritus, Dr. J.W. (Jack) Neilson, first dean of the Faculty and a close personal friend of Dr. Hart. Dr. Hart passed away in October 1984.

Following the scientific sessions, an important social program was presented. On November 9, an evening reception was held, honouring Dr. Neilson. That evening also marked the dedication of the Neilson Dental Library, and the official opening of the Faculty's new 6 chair, four handed dentistry clinic, the "Anniversary Clinic".

The reception on Friday night which fol-

lowed the presentation of plaques dedicating both the library and the clinic was both highly informative and highly entertaining. Held at the Faculty building on Bannatyne Avenue in Winnipeg, the reception paid tribute to both Dr. Neilson and Dr. Hart and featured photographs depicting various hijinks of the graduating classes of both 1964 and 1974, who were celebrating their 20th and 10th anniversaries, respectively.

Keynote speaker at the Saturday alumni luncheon was Dr. Jack Neilson, who paid tribute to some distinguished graduates of the University of Manitoba, including CDA President, Dr. Ralph Crawford. Dr. Neilson's remarks were both amusing and educational. Following the more light hearted part of his remarks, Dr. Neilson touched on the dental manpower issues facing dentistry and the importance of the contribution of dental alumni to both university life and to dentistry as a whole.

The photos show some of the highlights of the Homecoming festivities.

Mrs. Doris Pritchard, Head Librarian of the Faculty of Dentistry, University of Manitoba, told an interested audience some of the history of the library, before unveiling the plaque naming the library for Dr. Jack Neilson.

Dr. J. W. (Jack) Neilson, Dean Emeritus, and founding dean of the Faculty of Dentistry, University of Manitoba, receives a corsage from Miss Edith Williams, who has been the dean's assistant at the faculty for over 25 years.

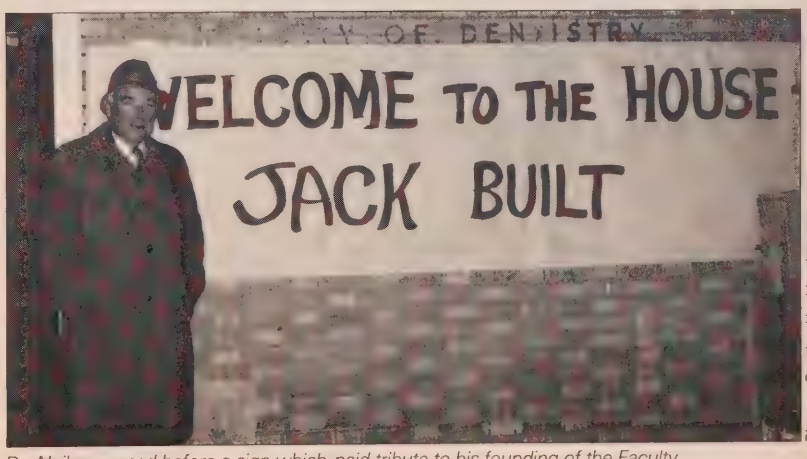
The present Dean of the Faculty of Dentistry, Dr. Arthur Schwartz and his wife Daphne.

The plaque naming the faculty library.

The plaque which dedicates the new dentistry clinic at the Faculty.

Dr. Neilson, right, is shown giving his former student, and present CDA President, Dr. Ralph Crawford, a few pointers and words of wisdom.

During the Friday night festivities, the dental units in the new anniversary clinic held plates of potato chips and other snacks, instead of the usual instruments



Dr. Neilson posed before a sign which paid tribute to his founding of the Faculty.

Photos: Carolyn Hackland

CONGRÈS DE L'ADC — 29 SEPT - 2 OCT. — CDA CONVENTION

Auxiliaries' programs being finalized

Most of the details of the programs for members of the Canadian Dental Hygienists and Dental Assistants' Associations have now been arranged, for sessions during the Annual Convention of the Canadian Dental Association, being in held in Ottawa, Ont., September 29 – October 2.

Many of the special events will be shared by the two auxiliary groups.

From Friday, September 27 until Sunday, September 29, the Canadian Dental Hygienists' Association (CDHA) will hold annual board meetings and workshops.

On Sunday, September 29, the Canadian Dental Assistants' Association (CDAA) will hold its board meeting for all delegates from each province.

The scientific sessions, open to members of both groups, will begin Monday morning, September 30, when Ron Perkid will speak on "Memory – Recall."

The CDHA President's luncheon will take place during the noon-hour Monday, and the CDAA luncheon is also scheduled at that time.

In the afternoon session, the speaker will be Allison Black, RN, whose topic will be "Motivation Techniques to Change Health Practices."

Tuesday morning, October 1, both groups will attend a session to hear Dr. H. Horowitz, DDS, and Mrs. A. Horowitz, RDH, both of Bethesda, Maryland, speak on "An Update on Caries Research."

In the afternoon, there will be a session directed by a National Health & Welfare Department spokesman on the subject "Report from the Working Group on Dental Hygiene." Also, a presentation by Sheryl Feller, MBA, RDH – "Developing Clinical Practice Standards for Canadian Dental Hygienists."

All of the above events will take place in the Chateau Laurier Hotel, Ottawa.

On Wednesday morning, October 2, in Ottawa's Skyline Hotel, a panel and discussion on the subject, "Are the Needs of the Geriatric and Handicapped Patients Being Adequately Met in Canada," will be conducted.

Social events

On Saturday, September 28, a white water rafting experience is being made available to all registrants. Transportation to the site will be included in the package.

CDHA registrants are also invited to participate in the annual Funn Runn, Sunday morning, September 29. In the afternoon, a boat cruise will be open to the first 200 auxiliary registrants.

Monday evening, September 30, the major social event, the CDHA dance, will be held in the Chateau Laurier Hotel.

CDAA program

On Sunday afternoon, September 29, following the annual CDAA board meeting, delegates will be able to participate in a sightseeing tour in Ottawa and environs. A registration party will follow in the evening.

Monday evening, September 30, CDAA delegates will share in the enjoyment at the CDHA dance in the Chateau Laurier Hotel.

CDAA delegates will share speakers with the hygienists on Monday, Tuesday and Wednesday morning.

The annual CDAA breakfast is scheduled for Wednesday morning, October 2.

Exhibitors respond

Kits have been sent to prospective exhibitors at the Convention, offering details of the facilities available in the Ottawa Congress Centre, and the scientific program to be offered.

It was pointed out that a record-breaking attendance total is anticipated.

The prospective exhibitors have now begun to respond in some volume, indicating a possible record number of exhibitors, also.

Enquiries

It should be noted at this point that anyone – dentist, auxiliary or prospective exhibitor, who has a question about the upcoming '85 Convention should address enquiries to:

The Canadian Dental Association,
1815 Alta Vista Drive,
Ottawa, Ontario K1G 3Y6
or by telephone: (613) 523-1770

CONTINUING EDUCATION

The following poem, written by Dr. Jack Wainschel, a U.S. medical doctor, recently appeared in the October issue of the Ontario Medical Review. Originally published by the American Medical News (March 2, 1984), the Editor was of the opinion that this piece would also strike a chord of recognition with all Journal readers who have ever attended a CE course, lecture or indeed a scientific session at a convention. Read on.

A CME Soliloquy

By Jack Wainschel, MD

Those of you who treat disease
Have a seat and listen please!
For I know you'll recognize
What we hate and so despise.
I'll describe a scene to thee
Which is known as CME:

Tuesday lunchtime every week
Thirty doctors bored and meek
To the lecture room repair,
Sign a list and take a chair.
Robot-like and without taste
They have come their time to waste.
And as time so slowly marches
They consume their lunch of starches:
Pasta with a greasy topping
Served with garlic bread for mopping.
Pie or brownies follow that.
Guaranteed to make you fat –
Everything we all entreat
All our patients not to eat.
Rises then the mighty Chief
And with introduction brief

Brings the speaker from the floor:
"Dr. Jurgen Fritz von Bore!"
Dr. Bore with accent thick turns the
lights off with a click
And proceeds in dark and quiet
Talking on the "Low Fat Diet."
Logarithmic inverse digits
Fill the screen, and no one fidgets.
And except for beepers beeping
Not a sound! THE DOCS ARE
SLEEPING!
Slides of graphs and dots and numbers
Cascade on the crowd that slumbers
Sonorously some are snoring —
No one hears von Bore who's boring.
On he drones this man insipid
On the evils of the lipid.
And he warns of heart ischemia
Due to high cholesterolemia.
Electron-micrographic dots
Are shown in coronary clots,
And multiphasic cardiac pacers
Are traced with radioactive tracers
To see if chylomicron widgets
Cause impotence in fertile midgets.
Thus tons of academic dung
With scientific flair are flung
On those who snoringly ignore
The esoteric Fritz von Bore.
And those who did the loudest snore
Applaud as if they wanted more.
When lights click on and all awake
Alertness, interest they all fake.
And bleary-eyed someone will snivel
A question on the useless drivel
Which caused all in the lecture hall
Postprandially asleep to fall.

Now Fritz von Bore thinks this is nifty.
He smiles and takes two-hundred-fifty.
He bids adieu to one and all,
And goes to the next lecture hall
Where with his cultured accent thick
He turns the lights off with a click
And then proceeds in dark and quiet
Talking on. . . AD NAUSEAM. . .

CFDE INVITES APPLICATIONS FOR TEACHER FELLOWSHIPS

March 1 next, is the deadline for filing applications for teacher/researcher training fellowships for the 1985/86 academic year, the Canadian Fund for Dental Education (CFDE) has announced.

Forms and additional information may be obtained from the dean's office in each Canadian dental school or from CFDE at 234 St. George St., Suite 202, Toronto, Ont., M5R 2P1.

Candidates must be Canadian citizens or landed immigrants who have completed an undergraduate course in dentistry, dental hygiene or a program in science, and be eligible for admission to a graduate school.

Applicants must declare their firm intention to become a teacher and/or researcher in a Canadian faculty of dentistry or dental auxiliary training program. The minimum commitment in this regard is two days per week and preference will be given to those applicants who will return to a full-time teaching/research position.

The number of fellowships to be awarded, and their value, will be determined by the CFDE Advisory Committee on Fellowship Selection and the Board of Trustees.

The names of the fellowship recipients will be announced as soon as possible after CFDE's annual meeting, approximately by mid-May of this year.

University dental teachers

This year, the CFDE will again offer a fellowship for an existing university dental teacher. This award is sponsored by Warner-Lambert Canada, Inc. and has a value of $2,500.

Candidates must be full-time members of the teaching staff of one of the Canadian schools of dentistry or dental hygiene with a minimum of five years university teaching experience. The purpose of the award is to provide an opportunity for an established teacher to refresh and extend his/her knowledge in any field of dental education and research. Preference will be given to those who are not supported by sabbatical salary or other grants.

The proposed program of study must be defined and well organized to ensure benefit to the individual and his/her school, and should be of approximately one month's duration. Shorter programs will be considered, however, and the award may be prorated. Conventions and the like will not be considered as appropriate programs of study within the terms of this award.

The deadline for filing applications is March 1, 1985. There is no official application form, however, full particulars of information to be submitted, can be obtained from the office of the dean of each dental school or the Canadian Fund for Dental Education office in Toronto, Ont.

CDIP IT'S YOUR PROGRAM

The concept of a national insurance program arose from a need perceived by members of the dental profession for comprehensive programs specific to the requirements of that profession. Over a number of years, this need has been satisfied through the growth of the Canadian Dentists' Insurance Program (CDIP).

The development of a program such as the CDIP is really a study in the process of evolution. The CDIP had a modest beginning with a few small insurance plans. Over the years, as the number of participants grew, it became possible to add new plans and special benefit features, to increase coverage maximums, and reduce premium rates.

Today the Canadian Dentists' Insurance Program is composed of nine separate plans of insurance. It is intended to reflect the needs of the profession as expressed through the many dentists serving on local, national, and provincial committees involved in the Program. When your needs change, your input through these committees to the directors of the corporation (CDSPI) controls the future direction of the program.

The evolution of the CDIP has come about as a result of Canadian dentists' demands for high quality, low cost insurance protection. This is now a reality, made possible by the fact that dentists own, control, and manage the Program.

You own the CDIP because the substantial reserves, which are required by law, belong to the CDIP and not to the insurers. This provides the Program with increased financial stability and allows the dentists to realize even greater savings. The CDIP itself is co-sponsored by the CDA and the ten provincial associations, which means you own it. You control it because the independent consultants and advisors hired by CDSPI take their direction from, and must report to, dentists. You manage the Program through the elected representation of the Board of Directors of CDSPI and an appointed Management Committee of practicing dentists, who are responsible for overseeing the day-to-day operations of the Program.

You, as a dentist, benefit through your Program in many ways, including strength in numbers, low premiums and personal service. Strength in numbers means that the actuarial risk is spread out over a greater number of people in all age groups, resulting again in plan stability and greater cost savings. Strength in numbers also means security; the CDIP is a strong and viable program and will continue to be so in future years. You benefit from the CDIP's extremely low premiums, made possible by the spread of risk, the group buying power of a large number of participants, and aggressive negotiations with the insurers. You benefit also from the service available through CDSPI. You can call toll-free anytime from anywhere in Canada. Your call will be handled by trained, experienced and knowledgeable service representatives. These representatives have access to your files, as well as to professional consultants, and the CDIP insurers, to provide prompt attention to all enquiries.

Currently, 95 per cent of the dentists in Canada are participants in the Program to some extent, and the number of claims

received daily bears truth to the fact that the CDIP does provide the kind of protection dentists require.

Perhaps the greatest benefit that you receive from your Program is the knowledge that when you do have a claim in any of the nine plans, your claim will be acted upon immediately to provide speedy and efficient settlement.

The Canadian Dentists' Insurance Program is available to members of the dental profession exclusively, and is considered to be the best and most comprehensive program available to members of any profession. You should always remember that the CDIP is YOUR program, and you can be proud of it!

BELGRADE, YUGOSLAVIA, WILL PLAY HOST TO 73RD ANNUAL FDI WORLD CONGRESS

Belgrade, a city of 1,500,000 located where the Sava River meets the Danube, will play host to the 1985 FDI World Congress, September 21-27.

The Sava Centre, the site of the Congress sessions, is a city within Yugoslavia's capital city. Together with the Belgrade Intercontinental Hotel, it is Yugoslavia's largest congress hotel, business and cultural centre. Since 1977, when the Sava Centre was inaugurated, more than 150 international conferences have been held there. A professional team is engaged in "congress engineering" and provides a complete package of services for any organization holding a convention or meeting of any kind.

Scientific themes

The major themes at the 73rd Congress will be: Multi-Disciplinary Approach to Periodontal Therapy, Emergencies and 'Risk Patients' in Dental Practice: Prevention and Treatment, and, The Care of Adolescents with Congenital Cleft Lips and Cleft Palates.

It is pointed out that in Theme 1, periodontal disease is the most widespread oral disease next to dental decay. Its contemporary treatment demands excellent cooperation between the various disciplines in dentistry. All aspects of cooperation between general practitioners, periodontists, prosthodontists and endodontists in the treatment of periodontal disease, will be elaborated and discussed.

Referring to main Theme 2, the organizers explain that all dentists are, from time to time, confronted with the problem of providing treatment for the patient who is "at risk" or in need of emergency care. This includes those who suffer from cardiovascular diseases and diabetes mellitus, as well as those who are taking therapeutic drugs. This program is designed to assist the general practitioner to recognize the problems and successfully treat these patients.

A sketch of the background of main Theme No. 3 states that the United Nations has designated 1985 as "International Youth Year." In keeping with this, the third main theme for Belgrade is dedicated to the treatment of persons with clefts. These patients suffer from various social and psychological as well as functional problems. These problems may be best solved through well-planned and systematically-performed treatment, provided by the general practitioner and various specialists. This is the first time this subject is to be discussed in detail at an FDI Annual World Dental Congress. It is expected that this theme will be of great interest to all dentists.

Ancient, culturally rich

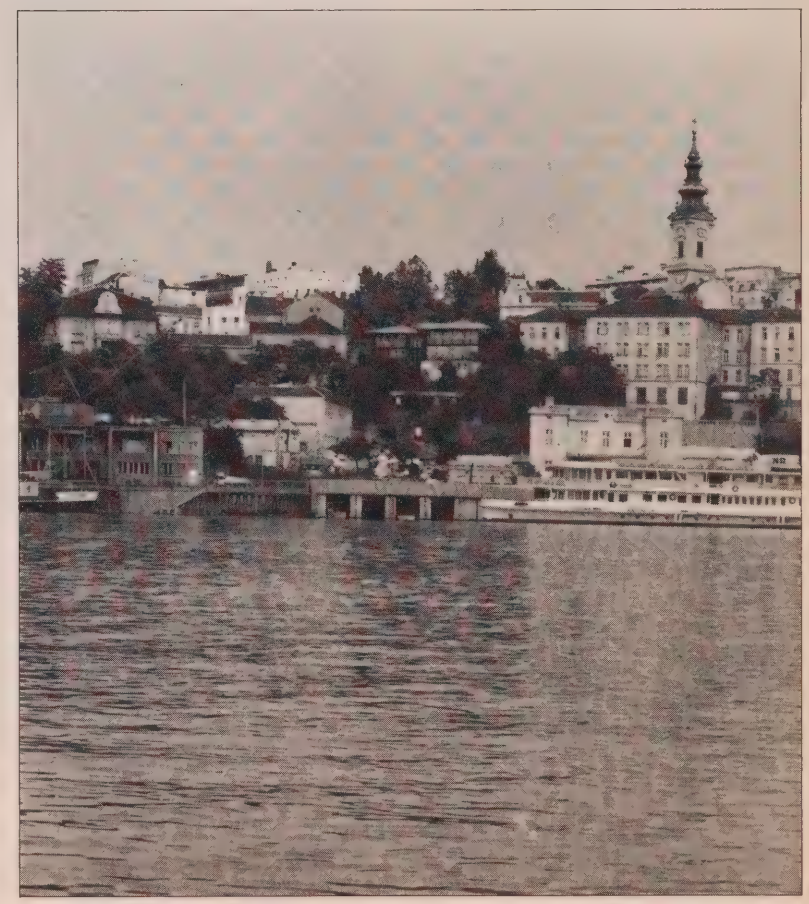
Belgrade's colorful history dates back to ancient times, when it was founded by the Celts. It had a period of Roman domination, when it was called Singidunum. That settlement was, in the Seventh Century, destroyed by the Avars and Slavs. It was soon rebuilt, because of its strategic importance. However, during the Middle Ages, it was completely devastated by the Magyars in their struggles against Byzantium.

The city came under Serbian rule in 1284, was recaptured by the Magyars in 1319 and remained in their possession until 1402, when the Magyars granted Belgrade to the Serbian despot Stefan Lazarevic. He rebuilt the city and made it the capital.

In 1459 when Serbia fell under Turkish rule, Belgrade was seized by the Sultan. The city however, flourished economically and grew into a large trade centre and port, with a population between 50,000 and 100,000.

The Austrians entered the picture in 1688, when they captured Belgrade from the Turks. But two years later, after the city had been razed, the Turks were once again in possession.

Ownership by the Serbians, Austrians and Turks continued to change hands until finally, in 1862, in a clash between the



Old Belgrade seen from New Belgrade

The Yugoslavian Houses of Parliament

Serbs and Turks, Belgrade came into the possession of Serbia for the final time. The city then grew into the political, economic and cultural centre of Serbia.

Many museums

Belgrade is a city of many museums. The National Museum, one of the leading cultural institutions, preserves art works classified by period and style, occasionally the bequest of a prominent painter or sculptor. The Modern Art Museum, the Applied Arts Museum, the Nikola Tesla Museum and the Ethnological Museum are among the world's most notable institutions of their class.

The Cvijeta Zuzoric Pavilion, the Fresco Gallery with the beauty of its frescos, and the Sales Gallery, are recommended for tours by foreign visitors.

The National Threatre, the Yugoslav Drama Theatre and the Atelje 212 are the leading attractions among the 15 theatres of the city. The Terazije Theatre is Belgrade's "Broadway music hall."

Variety of cuisine

Belgrade is a city of many national and modern restaurants where one can eat well. Both basically prepare the same dishes from the large repertoire of the national cuisine, but each in its own way uses a host of various piquant additions, which result from the fertile imaginations of cooks in this part of the world. As a result, their recipes have become famous far beyond the borders of their particular culinary region.

'City of good will'

Professor D. Kuburovic, President of the organizing committee for the Congress describes the city as "a city of good will and of hospitality. It is a free and open city, a city of companionship, with the heart of a child."

PRESIDENT'S COLUMN

by Dr. Ralph Crawford

DEDICATION TO DENTISTRY

Did you know that dentists have their own patron saint? Indeed we do. In fact, February 9th is the feast day of Saint Apollonia, and legend and tradition tells us that it is this lady of the 3rd century to whom one may invoke intervention against toothache and dental problems.

She was a member of a prominent family in Alexandria, and about 250 A.D. became a Christian. Her father was so angry about it he turned her over to the heathens for punishment. Thus it was that this devout Christian lady, Apollonia, was set upon by a group of idol-worshippers who treatened to torture her unless she denounced her God. Apollonia steadfastly refused. A soldier, grasping a pair of pincers, proceeded to systematically remove all her teeth. Apollonia, supported by her faith, would not renounce her God, nor did she ask for a word of mercy or cry out in pain.

The mob of idol-worshippers was enraged and further threatened to throw Apollonia into a roaring bonfire. Apollonia, resolute and without fear, leaped into the flames of her own accord. Thus, she has come down to us through the ages as the Saint of dental sufferers.

Certainly, as we transcend from 250 A.D. to 1985, and as we prepare for the third millenium, we do not witness too many martyrs of the like of Apollonia, but nonetheless, we are fortunate to have our share of modern day dental "saints."

As president of the Canadian Dental Association, I have the distinct privilege, as I travel about our great domain, to meet hundreds of men and women who dedicate immeasurable time and energy toward the betterment of our profession. In the past few months, having attended as guest/observer at meetings of the Newfoundland and Ontario Associations, visited three dental faculties, brought greetings to the Toronto Winter Academy and sat through numerous council and committee meetings at our Ottawa headquarters, I am continuously impressed at the contributions of our members. As I look forward to visiting other provincial meetings, I know the scene will be the same -- literally hundreds of dedicated workers in dentistry.

When our new CDA Directory of Officials arrived in my office, I was able to identify more than *200* men and women involved directly with CDA committees and councils. Dentists, hygienists, assistants; from Newfoundland to Vancouver Island, all "doing their share" to enhance our Association and Profession. Most of those listed are volunteers, and all contribute at a sacrifice of time and money, toward a cause in which they believe.

To our loyal staff at CDA, all twenty-four of them; and to the dozens of employees in each of our Corporate Associations, Licensing Bodies, Faculties, Armed Services, Society organizations, etc., the story is the same. Dentistry is indeed blessed with countless dedicated people. How fortunate we are!

There are almost 12,000 dentists in Canada, of which about 9,000 belong actively to the C.D.A. February is an important month of our Membership Campaign in the voluntary provinces of Ontario and Quebec. All of us across Canada who belong to the C.D.A. believe sincerely that a strong *National* voice is absolutely essential and we must encourage those non-C.D.A. members to join forces with us in a combined, cohesive association that speaks loud and clear for us all. Think what it does for our image of dedication, for our influence upon society, when the day arrives when we stand tall and true and proclaim "C.D.A. speaks for *all* dentists and *all* dentistry!"

This month we remember Saint Apollonia who made a supreme sacrifice to a cause and duty which she believed. Today we are grateful to the thousands who believe in our National voice, and especially we are grateful to the hundreds who dedicate unselfishly toward organized dentistry.

"There is no mean work, save that which is sordidly selfish: no irreligious work, save that which is morally wrong; in every sphere of life the post of honour is the post of duty." E. H. Chapin (1814-1880)

Briefly

A new Book of Remembrance has been donated to the Canadian Fund for Dental Education (CFDE) by the Newfoundland Dental Association.

CFDE's first Book of Remembrance has served the Fund for 21 years, and will continue to be on display at CFDE headquarters.

When advising the CFDE of the gift, Dr. Daniel Greene, President of the Newfoundland Dental Association, said that this special contribution was made by the members of his Association in recognition of the Fund's many achievements over the years, all of which have benefitted and will continue to benefit, the profession and the public. Dr. Greene further indicated that the suggestion for the donation had come from Dr. David Peters, who currently is serving as CFDE's Chairman.

The Newfoundland Dental Association has been a loyal supporter of CFDE's programs since the Fund's inception more than 20 years ago. CFDE trustees have been most appreciative of the Association's past support and have extended their thanks.

The new executive for the Association des chirurgiens dentistes du Quebec (QDSA) was elected recently.

Dr. Claude Chicoine is President, Dr. Pierre Corbeil is Executive Director. First Vice-President is Dr. Gilles Dubé, while the second Vice-President is Dr. Yves Giguère. Dr. Daniel Montminy is the Treasurer and Drs. Gaétan Duquette, Majella Gosselin and Gaston Michaud make up the rest of the executive, as members.

In 1984, there were three new graduates of the École de médecine dentaire, Université Laval's program in oral and maxillofacial surgery.

The program, which provides a special certificate in oral and maxillofacial surgery, is taught partly at the Université Laval and partly at the Hôpital de l'Enfant Jésus in Quebec City. The 1984 graduates of the post-graduate program are: Drs. Serge Brassard, Pierre-E Landry and Louise Marchand. The program is considered special since it requires 159 credits over a period of four years of post-graduate study to obtain the certificate.

Begun in 1971 the program usually graduates only one or two students a year. There are currently seven more students enrolled in the course.

Dr. Ralph Crawford, CDA President (right) is shown presenting Dr. Donald Bentley, (left), outgoing President of the American Dental Association, with a Canadian Eskimo carving, in honour of the ADA's 125th Anniversary. The presentation was made at the ADA Convention held in Atlanta in the fall of 1984.

Dr. Brock Rondeau of London, Ont., has been named president-elect of the International Association for Orthodontics. Dr. Rondeau, a 1966 graduate of Dalhousie University dental school will assume office as president, later this year. The honor is a rare one for a Canadian.

The 1,200 member Association is the oldest non-specialty organization for general dentists, paedodontists and orthodontists in the world.

Dr. Louis Bernier, a practising orthodontist in Québec City, has been appointed a Trustee of the Canadian Fund for Dental Education. He will represent the Province of Québec on the CFDE Board of Trustees.

Dr. Bernier succeeds Dr. Robert Dupont of the CFDE Board, whose term of office expired in 1984.

The new trustee is a well known figure in the dental profession in Canada. Dr. Bernier has served as President of La Société dentaire du Québec, the International College of Dentists and the Canadian Dental Association, and as Vice-President of l'Association dentaire de la province du Québec and le Collège des chirurgiens-dentistes de la province du Québec. He is a Fellow of the Royal College of Dentists (Canada), a member of the Pierre Fauchard Academy, and of the Québec, Canadian and American Associations of Orthodontists.

The Canadian Academy of Prosthodontics recently elected a new executive.

The new President is Dr. E. F. Rajczak, the President-elect is Dr. H. Gelfant and the Secretary Treasurer is Dr. B. M. Jackson.

The Academy's next meeting will be held at the Westin Hotel in Ottawa Ontario on September 26-28, 1985.

Dr. Saul Schluger

Dr. Saul Schluger, Professor Emeritus, Department of Periodontology, University of Washington, Seattle, is the 1984 recipient of the Alpha Omega International Dental Fraternity's Achievement Medal Award.

This award, presented first in 1936 and annually thereafter, has honored Nobel Prize winners, dental and allied scientists, as well as humanitarians, for outstanding contributions to the health professions and mankind.

Former recipients include Albert Einstein, Jonas E. Salk, Selman A. Waksman, Albert B. Sabin, LeRoy M. D. Miner, William J. Gies, Rosalyn Yalow, Thomas Parran, Maynard K. Hine, U.S. Congressman John E. Fogarty and many distinguished dentists.

Dr. Schluger has been honored for an outstanding career in periodontology as a clinician, researcher, educator, editor and author.

In the interests of curbing the rising costs of malpractice insurance, the American Dental Association's Council on Insurance has proposed the establishment of professional assessment committees at the constituent society level across the U.S., to advise the CNA Insurance Companies on matters involving the ADA-sponsored Professional Protector Plan.

The committees, comprised of member dentists, would make recommendations to the CNA and the Council in areas where the expertise and technical knowledge of the practising dentist is essential – underwriting, claim settlement and loss prevention.

The move is intended to increase the role of the dental practitioner in the operation of the Professional Protector Plan as a means of controlling the rising cost of malpractice coverage.

One of the duties of the committees would be to provide assistance to the CNA where there might be a need to examine dental facts pertaining to an alleged malpractice incident. In such cases, the committees would assess whether the dental treatment deviated from the accepted standards of care and, if so, whether such deviations were the proximate cause of the injury alleged by the patient. Based on their evaluations, the committees would provide advice on the defensibility of a claim from a professional standpoint.

The Council intends to implement the committee process in five test states in the U.S., before expanding it to all states where the Professional Protector Plan is co-endorsed by constituent dental societies.

The ADA has acknowledged that most dentists love to travel and has set up a variety of international and off-shore ADA professional meetings during this year.

Among the exotic and interesting locations for ADA continuing dental education programs, are San Juan, Puerto Rico, Nice, on the French Riviera, Honolulu, Hawaii, Belgrade, Yugoslavia, and Montréal.

The session in Montréal, June 19-23 will be a continuing education seminar on financial planning.

ADA's Council on International Relations will provide descriptive literature on the program.

In October 1984, as part of the 125th Annual Session of the American Dental Association, seven U.S. dental students were selected as winners in the 1984 ADA/Dentsply Student Clinician Program. The ADA annual session was held in Atlanta, Georgia.

Dental students from all over the U.S. and Puerto Rico participated in the clinician program. The program has been sponsored by Dentsply International since 1959. Dentsply International also sponsors a similar student clinician program in Canada, during every Canadian Dental Association convention.

The photo shows the winners in the two categories. Category I is Clinical Application and Techniques and Category II is Basic Science and Research. The sponsors of the program are also shown in the photo.

The attrition rate for freshmen in United States dental schools climbed from 4.3 per cent to 5.6 per cent over the past three years, a recent survey published by the ADA Division of Educational Measurements has reported.

Personal rather than academic reasons were cited as the reasons for withdrawal, in most cases. A change in career objectives was the most frequently given reason for leaving the dental schools.

Seated, left to right: Dr. Harold E. Barlow, Chairman of the ADA Council on Annual Session; Stephanie Bryant, University of Alabama, 1st place — Cat. I; Dr. John L. Bomba, President of the American Dental Association; Trina Lee Alley, University of Louisville, 1st place — Cat. II; and Mr. Burton C. Borgelt, President and Chief Executive Officer of Dentsply International. Standing, left to right: Ronald Egan, Marquette University, Honorable Mention Cat. II; David H. Moore, University of North Carolina, 2nd place — Cat. I; Reed H. Day, Harvard School of Dental Medicine, 3rd place — Cat. II; Leslie H. Sultan, University of Maryland, 2nd place — Cat. II; and Robert J. Limardi, State University of New York at Stony Brook, 3rd place — Cat. I.

Students withdrawing for personal reasons had good academic standing, but said they left to follow a career other than dentistry. For those who left because of academic reasons, more of them withdrew because of problems with didactic courses rather than technical courses. Both areas of difficulty have a significant relationship to Dental Admission Test scores.

New submission dates and regulations for submitting projects under the National Health Research and Development Program of Health and Welfare Canada have recently been announced.

New submission date for Training Awards is February 15, for funding normally starting on or after September 1, 1985. Career Awards submissions must be submitted by July 31, 1985 for funding starting on or after April 1, 1986.

New application forms are currently available and eight copies of the completed application must now be submitted with the research proposal. This year's priorities have been identified as: Organization and Delivery of Health Care; Environmental Health Hazards; Primary and Secondary Illness Prevention; Habilitation and Rehabilitation and Health of Native Peoples.

Contact: Greg Smith, Director, Research Administration, 613-990-8127 for more information or see JCDA, Vol. 50, No. 7, pgs 502-503.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on December 31, 1984.

Common Stock Fund	$81.09177
Fixed Income Fund	$42.84646
Money Market Fund	$30.53434
Balanced Fund	$26.75006

Total assets (market value) of the plan were $40,620,421.

The previous month's figures, as of November 30, 1984, stood as follows:

Common Stock Fund	$79.60660
Fixed Income Fund	$42.05349
Money Market Fund	$30.24661
Balanced Fund	$16.41503

Total assets (market value) of the plan were $40,463,515.

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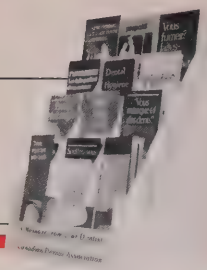

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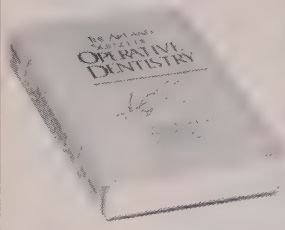

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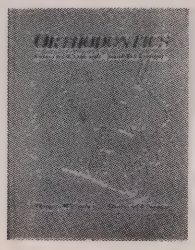

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DRY SOCKET

ALVÉOLITE SÈCHE

1. Amler, M.H. *The interrelationship of dry socket sequelae*. New York Journal of Dentistry, v. 50, no. 6, June–July 1980, pp. 211-217.

2. Bystedt, H., Nord, C.E. and Nordenram, A. *Effect of azidocillin, erythromycin, clindamycin and doxycycline on postoperative complications after surgical removal of impacted mandibular third molars*. International Journal of Oral Surgery, v. 9, no. 3, June 1980, pp. 157-165.

3. Catellani, J.E. and others. *Effect of oral contraceptive cycle on dry socket (localized alveolar osteitis)*. Journal of the American Dental Association, v. 101, no. 5, November 1980, pp. 777-780.

Abstract:
Use of oral contraceptives was associated with a significant increase in the frequency of dry socket after extraction of mandibular third molars. The probability of dry socket increases with the estrogen dose in the oral contraceptive. The risk of dry socket associated with oral contraceptives can be minimized by performing extractions during days 23 through 28 of the tablet cycle.

4. Davis, W.M., Jr., Buchs, A.U. and Davis, W.M. *The use of granular gelatin-tetracycline compound after third molar removal*. Journal of Oral Surgery, v. 39, no. 6, June 1981, pp. 466-467.

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Abstract:
A clinical investigation was undertaken to find the incidence of dry socket as a post-operative complication of dental extraction on an out-patient basis. Two thousand three hundred and sixty three extractions were carried out under local anesthesia by clinical staff and students over a four month period. The results are presented and their significance discussed, the incidence of dry socket being found to be dependent upon the site of the tooth extracted, the relative difficulty of the extraction and upon the integrity and size of the bloodclot in the extraction socket.

6. Holland, C.S. and Hindle, M.O. *The influence of closure or dressing of third molar sockets on post-operative swelling and pain*. British Journal of Oral and Maxillofacial Surgery, v. 22, no. 1, February 1984, pp. 65-71.

Abstract:
This study compares the influence of complete closure as opposed to partial closure and dressing of lower third molar sockets on post-operative pain and swelling, and on healing. These closure techniques were used on opposite sides of the mouths of each of 70 patients undergoing bilateral third molar surgery. The comparison of the two techniques within each individual patient showed that complete closure resulted in more pain and swelling post-operatively in a significant number of patients, but that the use of a dressing delayed satisfactory healing in a few patients.

7. Julius, L.L. and others. *Prevention of dry socket with local application of Terra-Cortril in gelfoam*. Journal of Oral and Maxillofacial Surgery, v. 40, no. 5, May 1982, pp. 285-286.

8. Krekmanov, L. *Alveolitis after operative removal of third molars in the mandible*. International Journal of Oral Surgery, v. 10, no. 3, June 1981, pp. 173-179.

Abstract:
The aim of this investigation was to assess the importance of various factors in the etiology of alveolitis sicca dolorosa. Two hundred partially erupted or totally impacted mandibular third molars were surgically removed. The patients were divided into four groups. The patients in group 1 were premedicated with a single dose of penicillin-V (phenoxymethylpenicillin), those in group 2 with an antisialogogue (methylscopolamine nitrate), and those in group 3 with an antifibrinolytic agent (tranexamic acid). Group 4 were non-premedicated controls. The frequency of alveolitis in the groups 1 and 2 was significantly less than in groups 3 and 4. This indicates the importance of salivary contamination of the surgical field and of infection as aetilogic factors in alveolitis.

9. Matthews, R.W. *An evaluation of dextranomer granules as a new method of treatment of alveolar osteitis*. British Dental Journal, v. 152, no. 5, March 1982, pp. 157-159.

10. Mitchell, L. *Tropical metronidazole in the treatment of 'dry socket'*. British Dental Journal, v. 156, no. 4, February 1984, pp. 132-134.

11. Mitchell, R. *An unusual reaction after the treatment of a dry socket*. Journal of Dentistry, v. 11, no. 3, September 1983, pp. 245-248.

12. Nitzan, D.W. *On the genesis of "dry socket"*. Journal of Oral and Maxillofacial Surgery, v. 41, no. 11, November 1983, pp. 706-710.

Abstract:
One of the major schools of thought regarding the pathogenesis of a dry socket occurring following tooth extraction is based on the concept that a blood clot fails to form, a concept that is, however, refuted by the clinical symptoms associated with the phenomenon of a dry socket. A second theory maintains that, initially, clot formation takes place, but that the clot is subsequently lysed, bringing about the severe symptoms of a dry socket. Fibrinolysis generated by tissue activators only partly explains the occurrence of a dry socket. Based on the data accumulated in the literature, it is postulated that bacterial agents are involved in the fibrinolysis and that Treponema denticola may play a leading part in this process.

13. Nordenram, A. and Grave, S. *Alveolitis sicca dolorosa after the removal of impacted mandibular third molars*. International Journal of Oral Surgery, v. 12, no. 4, August 1983, pp. 1226-1231.

Abstract:
The aim of the investigation was to study the occurrence of alveolitis and other side effects in women taking oral contraceptives after surgical removal of impacted mandibular third molars. Reactions to surgical removal of 156 bilateral third molars were examined in 78 patients. The material was divided into 2 groups. In 1 group, the patients took oral contraceptives of the combined type and in the other group the patients took no contraceptives. Each group was further divided into 2 subgroups: (1) removal of a molar during menstruation; and (2) removal of the contralateral molar in the same patient at the middle of the menstrual cycle. The results showed significantly more alveolitis in the group taking oral contraceptives and in women who were operated on during menstruation. These findings would suggest that oral surgery involving fertile women should be undertaken during periods free from oral contraceptives and menstruation.

14. Olson, R.A., Roberts, D.L. and Osbon, D.B. *A comparative study of polylactic acid, Gelfoam, and Surgicel in healing sites*. Oral Surgery, Oral Medicine, Oral Pathology, v. 53, no. 5, May 1982, pp. 441-449.

15. Schofield, I.D. and Warren, B.A. *The clinical presentation and pathology of the dry socket syndrome*. International Journal of Oral Surgery, v. 10 (Supplement 1) 1981, pp. 107-113.

16. Schofield, I.D., Warren, B.A. and Rozanis, J. *Review of localized osteitis*. Canadian Dental Association Journal, v. 46, no. 3, March 1980, pp. 189-194.
17. Syrjanen, S.M. and Syrjanen, K.J. *A new combination of drugs to be used as a preventive measure for the postextraction complications. A preliminary report*. International Journal of Oral Surgery, v. 10, no. 1, February 1981, pp. 17-22.
18. Turner, P.S. *A clinical study of "dry socket"*. International Journal of Oral Surgery, v. 11, no. 4, August 1982, pp. 226-231.

Abstract:
A total of 1274 extractions carried out by the author resulted in a dry socket incidence of 2.6%. There was no sex predilection in the occurrence of dry socket. Incidence of dry socket formation was highest in the first and second molar region. Forceful infiltration of an extra 2 ml of local anesthetic into the tissues resulted in a higher incidence of dry socket; however, this difference was not statistically significant. Dry sockets occurred more frequently in difficult extraction cases as compared to routine extractions; this difference was statistically significant. However, when 20 teeth in difficult extraction cases were removed by the open surgical method there were no cases of dry socket formation. Teeth removed principally due to a periodontal involvement did not give rise to a single case of dry socket. Treatment of dry socket with intra-alveolar dressings did reduce the pain; however, the healing time was invariably prolonged. The best results, in the form of reduction of pain and rapid healing were obtained with the surgical method of reflection of a flap and debridement of the socket.

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Book Reviews

MANUAL OF MINOR ORAL SURGERY, A STEP BY STEP ATLAS

H. Birn and J.E. Winther

W.B. Saunders Co.
Toronto, Ont., 131 pp.

This second edition of a Manual of Minor Oral Surgery is accurately described by the publishers as a revised reprint, in that it contains few changes from the original text published in 1975. The authors are careful to emphasize in their introduction that the Manual is not intended to replace standard textbooks in oral surgery which deal in a comprehensive manner with basic surgical sciences, diagnosis, treatment, overall patient care, and clinical problems, but rather is to be used as a guide to the orderly completion of specific surgical procedures. The text which has an appropriate format to achieve this objective, consists of thirteen major sections which may be said to comprise "Minor Oral Surgery" recognizing that the attribute of minor should not be misinterpreted as trivial! The line drawings and simple, though anatomically correct, illustrations are clear and alongside them on the same page, the text is concise yet complete, with little waste of words. The finished product suggests that considerable time and care have been given to achieve clarity which is absolutely critical in a manual and in this there is no doubt that the authors and publishers have succeeded.

Regarding its content, accomplished oral and maxillofacial surgeons will find little for them in this text, although a review of basic technique is never wasted, but the stated target group, the dental student, and the general practitioner who performs oral surgery procedures, will find many useful sections of which the first, dealing with standard surgical procedures is perhaps the most important. It must be recognized that many variations of surgical technique exist and the inclusion of additional material to try and describe all possible surgical approaches to particular clinical problems would have defeated the intent of the authors. They are to be congratulated on keeping the second edition as lean as the first.

One discrepancy I noted was the recommendation to use a straight handpiece where possible for bone removal, yet in the majority of procedures illustrated the right-angled handpiece is shown. The lack of a short section dealing with aseptic technique is a glaring omission which in today's world of Hepatitis B and AIDS should perhaps be mandatory for an oral surgery manual.

In summary, this book fills a gap in the oral surgery literature and provided it is used intelligently, and not in isolation, it is a useful aid both for teaching and practicing minor oral surgery. In that context it can be recommended to students and practitioners.

This book was reviewed by
Dr. John B. Curran, Associate Professor,
Oral and Maxillofacial Surgery,
University of Manitoba,
Winnipeg.

THE PERIODONTAL LIGAMENT IN HEALTH AND DISEASE

Editors; Berkovitz, B.K.B., Moxham, B.J., and Newman, H.N.

Pergamon Press,
Elmsford New York.
$49. U.S., 470 pp.

That a whole textbook can be devoted to the biology of the periodontal ligament is testament to the advances in knowledge and research on this subject over the last decade. The editors are therefore to be congratulated for bringing together knowledge on the subject from various dental disciplines and assembling it in one volume. The target audience for the book is the dental researcher and graduate student, and since the book does not concern itself with therapy it probably has a somewhat limited appeal to the clinician in general dental practice. Nevertheless, there is much that would be of interest to not only postgraduate students but to specialists in periodontics, endodontics and orthodontics.

The book consists of twenty chapters, the topics ranging from the comparative anatomy of tooth attachment through the histology, physiology and biochemistry of the normal periodontal ligament to the effects of various disease processes on the ligament. I thought the chapters on 'Physiological Tooth Movement' and 'Trauma and the Periodontal Ligament' to be particularly well written and there is an excellent review of the relationship of host response and genetic factors in juvenile periodontitis in the chapter on 'Development Abnormalities and Periodontal Disease'.

As is often the case in a text written by multiple authors, there is a variation in viewpoint on the same topic between chapters, but I personally found this approach refreshing rather than distracting. The quality of the micrographs and illustrations is high although many of them would benefit from some form of labelling on the micrographs themselves, and this would be especially important if the book is to be read by workers in fields other than dentistry. The lists of references at the end of each chapter are comprehensive and in a style and typeface that makes them particularly easy to read. The book is available in softcover which reduces the cost and should allow the editors to update and revise it at relatively frequent intervals. It is a book which contains much useful information and one I would recommend for every graduate or postgraduate dental library.

This book was reviewed by
Dr T.R.L. Gould, Assistant Professor,
Dept. of Oral Medicine,
University of British Columbia,
Vancouver, B.C.

INTRODUCTION TO ORAL IMMUNOLOGY

A.E. Dolby, D.M. Walker and N. Matthews

W.B. Saunders Co.
London, England.
102 pp.

Interest and literature in immunological phenomena and their possible role in the health and disease of oral structures has burgeoned over the last fifteen to twenty years. As the authors point out in the preface not all areas of research have progressed at the same rate, leaving variations in depth of understanding of immune mechanisms in the mouth.

"Introduction to Oral Immunology" is a small (102-page) soft cover text written by pioneers in the field. They have resisted the temptation to include a section on basic immunology on the basis that the student would have some knowledge of the area. This seems a wise decision, since this is an integral part of the undergraduate curriculum and there are now numerous texts on the subject. This introduction contains eight chapters covering host defence components of the mouth, dental caries, pulpal and periapical conditions, periodontal disease, candidosis, viral infections, ulcerative and bullous lesions, immunity and neoplasia, and immunodeficiency. When necessary some revision to basic immunology is undertaken to clarify the concepts.

The text is well written and clear and manages to give a concise account of areas having a considerable body of work. Dental caries and periodontal disease are good examples. Immunity of oral cancer is impossible to describe without extrapolating from work done in other cancers. This the authors have done admirably in limited space with a brief but interesting account of the association of the Epstein-Barr virus with oral cancers. The chapter on oral ulceration is stimulating although description with such limited discussion may leave one groping for a reason why a book should be published in this subject with such patchy support in the literature. However, the growing importance of oral immunology does leave a need for concepts to be presented to the student.

Unfortunately not many concepts are clarified by the numerous figures throughout the text, the meaning of many yielding only to the most painstaking scrutiny. For instance figure 1.1 gives examples of substances that cross or are stopped at the epithelial barrier. It is confusing and the space and complexity seem somewhat out of proportion to the relevance of the message. Similarly one wonders if the authors might have had more success with the traditional allocation of ten thousand words than the effect created by figure 2.6 concerning immunity in pulpal disease, periapical granulomas and radicular cysts. Other examples abound. One other trait that I found irritating was the miserly use of references in some chapters. Although this is an introductory text the subject is not one that would normally attract the casual reader and those who are developing an interest may appreciate easier access to key references. It would be unfair not to compliment the authors, however, on the fact that what references and reading lists are cited are well chosen and informative. One irony is that in the chapter on ulcerative and bullous diseases, in which Professor Dolby is an acknowledged leader in the subject, his own work is not cited. Compounding this irony, his work *is* cited in a similar text by Roitt and Lehner "Immunology of Oral Diseases". This latter text, despite being bloated by a section on basic immunology, is ultimately more informative.

This small book represents a brief summary of oral immunology which is of growing importance in most undergraduate and post-graduate curricula. It presents well written and occasionally clearly illustrated ideas concerning what is known of immunological phenomena in the mouth. There appears to be some paradoxical intent in that it expects the reader to be familiar with basic immunological principles, but not to want to resort to the literature on several important points, or at least not to expect too much help from certain chapters in this respect. Nevertheless the book is an introduction, and like a visit to the beach will let the reader wet his feet before making the decision to take the plunge or return to the comfort of the reclining chair.

This book was reviewed by
Dr. R.J. McComb, Associate Professor,
Dept of Oral Medicine and Pathology,
University of Toronto,
Toronto, Ont.

ASSESSING DENTAL MANPOWER REQUIREMENTS. ALTERNATIVE APPROACHES FOR STATE AND LOCAL PLANNING

DeFriese, G.H. and Barker, B.D.

Cambridge, Massachusetts.
Ballinger Publishing Company,
1982. 159 p. (hard cover).

The book is one of a series of publications on "Issues in Dental Health Policy" sponsored by the W.K. Kellogg Foundation. It is well organized and written in plain language rather than in economic jargon like so many academic publications on manpower. It is divided into three parts.

The first two chapters outline the historical context of dental manpower issues in North America and the both complementary and different roles of government, practicing dentists and academic researchers in relation to these essentially political issues. Despite the lack of an agreed-upon definition of health by society, the need to consider the public's oral health status (and not merely dental personnel numbers) as the focal point of dental manpower studies is emphasized. The important but often confused or ignored concepts of need, demand and supply are described and interrelated. The proposed conceptual model of dental manpower arising from this interrelationship consists of a comparison of the volume of dental services that can be produced with the volume of these services required by the public. The resulting critical difference represents either a shortage or surplus of manpower. In the third chapter a strong argument is made for the cooperative involvement of practicing dentists in dental manpower studies, along with suggestions on the ways they can contribute. This, as well as the need to recognize that the initial questions posed about manpower determine (limit) what is done and can be learned, is a recurring theme throughout the book. There are many sentences worth quoting (and remembering).

These three chapters, the preface and the last part of the book (chapter eight), which offers a summary evaluation of the state dental manpower studies reviewed, should be required reading for any private or public health dentist or academic seriously interested in dental manpower planning and concerned about it. The insight and sensitivity of the authors to the complex issues will make the effort worthwhile.

Consistent with the title, the middle part of the book contains four chapters which describe in a case study format the background, strengths and limitations of four different dental manpower study approaches that have been completed in seven different states of the United States in recent years. The use of methods which for better-or-worse have actually been utilized in large geographical areas lends practical credibility and utility to the authors' efforts. The approaches reviewed range in complexity from simple projections of dentist-to-population ratios (Kentucky) through to much more elaborate state-wide assessments of oral health and dentists' practice characteristics (North Carolina). Between these two extremes, approaches which attempt to assess demands for dental care against its potential supply are described. The details of each dental manpower planning method can be found in the text. A standard format for evaluating each method is provided. This should be a useful guide to others planning such research. The dentist-to-population ratio method which is very popular because of its simplicity to calculate and the greater availability of the necessary data, gets its usual, deserved pasting. However, none of the other, more detailed approaches gets a clean bill of health either. It is particularly noteworthy that all the approaches are weak in assessing the demand side of dental care. If demand is considered at all it is determined by health professional judgement or by questionable extrapolation from national data or by arbitrary adjustments of epidemiologic dental survey data. There is a need for much work here. Although the authors clearly set terms of reference for the book which precluded this, it, nevertheless, would have been helpful for those using the book to get some practical advice, perhaps in an appendix, on a method for estimating the level of demand for dental personnel which directly involves the public.

Commendably, there are very few errors in the text. Figure 2-2 which explains the concept of demand, supply and need appears not to label "market shortage" correctly according to the original figure by Jeffers and others which the authors adapted for this book. Also, the original figure is easier to understand. But this is quibbling because, overall, the book is excellent and timely. It deserves a wide readership.

This book was reviewed by
Dr Donald W. Lewis, Professor of
Community Dentistry, University of Toronto,
Toronto, Ontario

PERMAR'S ORAL EMBRYOLOGY AND MICROSCOPIC ANATOMY. A TEXTBOOK FOR STUDENTS IN DENTAL HYGIENE.

R.C. Melfi

7th edition, pp. XIV + 206, Illus, Philadelphia: Lea and Febiger, 1982, $18.75.

The advent of a 7th edition of a textbook of which previous recent editions have been reprinted almost annually surely attests to its popularity as a recommended text by numerous teachers of oral histology. In reviewing such a well-established textbook, one seeks to gain insight into the reasons for its widespread use (i.e. the "secret" of its success) and to see if that approbation is justified.

This text, first published in 1955, has been eponymously named after its first author, Dorothy Permar, who died shortly after the 6th edition was published. Dr. Melfi, who was a co-author of the previous edition, has attempted to maintain Miss Permar's winning formula in this most recent edition. Indeed, apart from switching the order of the first two chapters (from "Embryonic Development of the Face and Oral Cavity" to "Introduction to Histology") which makes better sense, the titles, and even sub-titles of the 13 chapters of this book are identical in the 6th and 7th editions. The number of pages between editions has increased from 186 to 206 as has the number of illustrations from 137 to 154. While the majority of previous illustrations has been retained, additional photomicrographs have greatly expanded the pictorial aspect of this new edition. The uncritical retention of previous illustrations, particularly the discredited concepts contained in Figs. 2-5 and color plate I regarding the embryology of the face regretably leads to the portrayal of continued misinformation in this field.

The style of writing of the text is pitched at an elementary level of introductory concepts, to the extent of indicating the pronunciation of new words. As such, this format no doubt accounts for its popularity among dental hygiene students who may have minimal or no previous background in biological studies. For the dental student, and more so for the dental practitioner, the simplified writing style is too elementary for stimulating instructive reading. However, the text undoubtedly suits its purpose for the novitiate to the field.

The style of references to the literature that has been added to from previous editions, but not fully updated, is both scattered as footnotes on the text pages and listed occasionally at the end of chapters. This uncoordinated reference style is frustrating for literature reference searching, and rules out this text as a useful research source. Indeed, it omits reference to a good number of recognized recent standard textbooks in this field of study, and must be judged as very deficient in this respect.

How does this text measure up to other recent texts in this field? The publication by the same publisher of a competitive text, "Dental and Oral Tissues" by Moss-Salentijn and Klyvert, not to mention several other publishers, new texts in oral histology directed to dental students, is making this a crowded field of publication. The other texts are perhaps too advanced for undergraduate dental hygiene consumption, or cover too wide a field for the constraints provided by the course delineation of "oral histology". It is evident that this text has been tailored to fit into a one-term course in this subject, and its adoption by many dental hygiene programs has in turn dictated the contents of this subject in many dental hygiene curricula. This coincidence of objectives is responsible for the continued recommendation of this textbook.

The quality of production of this book is of a high standard with excellent reproduction of the photographic material and only the rare typographical error (which should have been eliminated by the 7th edition of a text!). The publishers are to be congratulated on producing a high-quality paper hard-cover book at a most reasonable cost that no doubt accounts for much of its well-deserved popularity.

This book was reviewed by Dr. G.H. Sperber, Dept. of Oral Biology, Faculty of Dentistry, University of Alberta, Edmonton

OBITUARIES/NÉCROLOGIES

ARNOLD, WJ: A long-time resident of Manitoba, Dr. Arnold was born in 1898. He practiced dentistry in Baldur, Manitoba, and Winnipeg, Manitoba. He joined the staff at Deer Lodge Hospital in 1946, where he practiced until his retirement in 1964.

BOULAY, J.: Né en 1935 et diplômé de l'Université de Montréal en 1960, le Dr Boulay habitait à St-Hyacinthe au moment de son décès.

FERGUSON, HR: A Life Member of the Canadian Dental Association, Dr. Ferguson was born in 1900, and graduated from the University of Toronto in 1924. He practiced in London Ontario until his retirement in 1971. He was a resident of that city at the time of his death.

GIFFORD, RJ: Born in 1921, Dr. Gifford graduated from McGill University in 1950. He practiced dentistry in New Westminister B.C., where he was residing at the time of his death.

HART, H.W.: Dr. Hart, Professor Emeritus at the University of Manitoba, and widely known in both the U.S. and Canada in his field of prosthodontics, passed away in October 1984. Born in British Columbia, he was a graduate of the University of Oregon Dental School (North Pacific College) in Portland. He was a Fellow of the Royal College of Dentists of Canada, and a Fellow of the American College of Dentists.

PEPPER, J.B.: A Life Member of the Canadian Dental Association, Dr. Pepper was born in 1907 and graduated from the University of Toronto in 1933. He was a resident of Toronto, Ontario at the time of his death.

POIRIER, G.: Né en 1922 et diplômé de l'Université de Montréal en 1949, le Dr Poirier habitait à Waterloo (Québec) au moment de son décès.

POISSANT, G.: Diplômé de l'École de médecine dentaire de l'Université de Montréal en 1981, le Dr Poissant est décédé à l'âge de 32 ans, à St-Hubert, Québec, à la suite de circonstances tragiques.

PROCTOR, D.B.: Dr. Donald Proctor, a respected member of the dental profession in Winnipeg and full time professor in the Department of Stomatology at the University of Manitoba, passed away November 12, 1984. He was, in 1980, recipient of the University's Professor of the Year award, and was also a Fellow of both the International College of Dentists and the American College of Dentists. He was a past president of the National Dental Examining Board and served on many occasions as their Chief Examiner. A memorial fund in memory of Dr. Proctor has been set up by the University of Manitoba, and donations may be made to: Dr. Donald B. Proctor Memorial Fund, Faculty of Dentistry, 780 Bannatyne Ave, Winnipeg, Manitoba, R3E 0W3.

RABINOVITCH, A: A graduate of the University of Toronto in 1926, Dr. Rabinovitch was born in 1903. He was an active practicing dentist in Kamsack, Saskatchewan and Winnipeg, Manitoba for 50 years.

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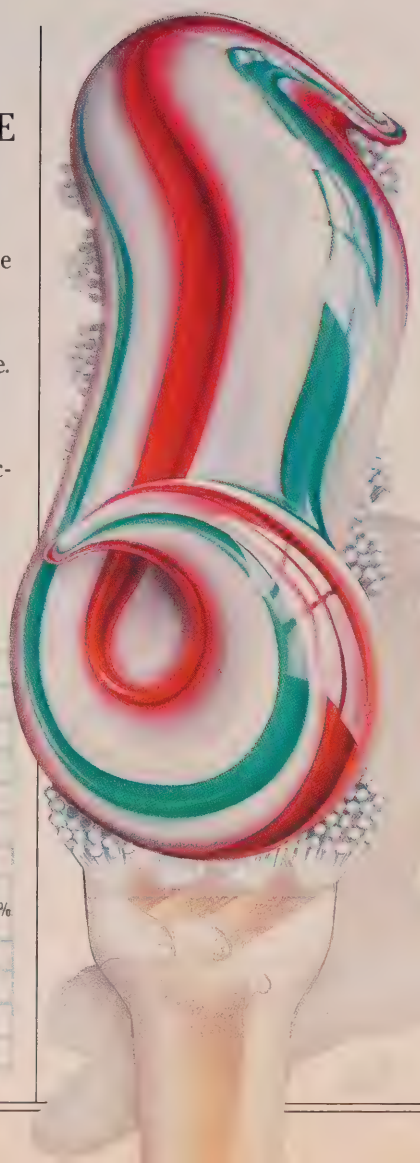

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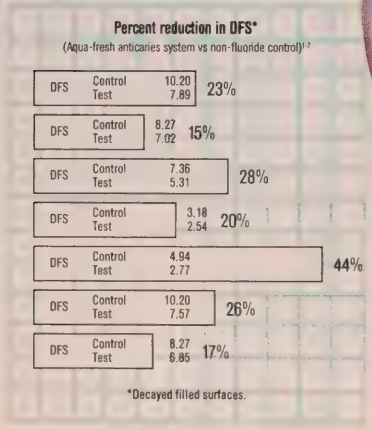
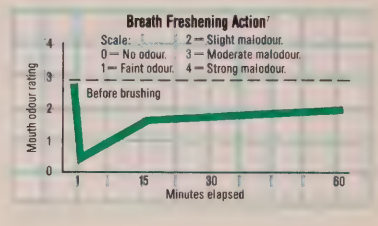


2 FRESHENS BREATH AND REDUCES ORAL MALODOURS.



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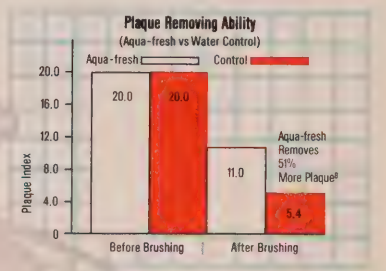

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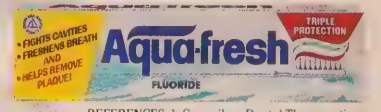

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*T.M. Reg'd.

A MOBILE DENTAL CLINIC PROGRAM AS PART OF THE DENTAL CURRICULUM

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SUMMARY

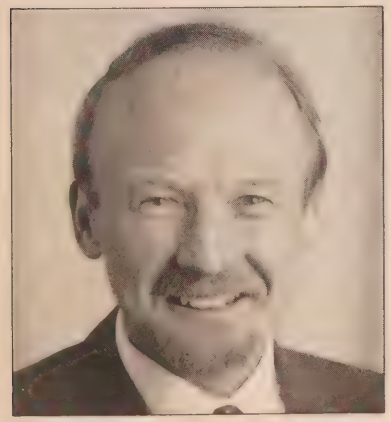
The province of Alberta provides comprehensive dental care services in three underserviced areas by three mobile dental clinics manned by dental and dental hygiene students plus a dentist/supervisor and local support staff. The uniqueness about this program is that the Mobile Dental Clinic rotation is an official course of IV Dental Year and II Dental Hygiene in which ***all*** *dental and dental hygiene students spend two weeks on one of the Mobile Dental Clinics as part of their final year undergraduate curriculum.*

The Mobile Dental Clinic program has now completed the tenth year of operation and continues to achieve its major objective for the Faculty of Dentistry by providing a unique educational experience for the students. At the same time a very acceptable and needed service for selected underserviced areas has been made available where previously it was not readily at hand.

INTRODUCTION

Many provincial governments provide dental services to underserviced areas by means of portable dental equipment or mobile dental clinics manned by salaried dental personnel. Some are earmarked for preventive services only,[2] some relate only to low-income groups,[3] or specific age groups (often children),[4] some are but seasonal offerings[5] and some are directed towards a specific population group such as the handicapped.[1]

In the province of Alberta comprehensive dental care services are provided for all age groups in three underserviced areas by three mobile dental clinics manned by dental and dental hygiene students plus a dentist/supervisor and local support staff. ***The uniqueness about this program is that the Mobile Dental Clinic rotation is an official course of IV Dental Year and II Dental Hygiene***. All dental and dental hygiene students spend two weeks on one of the Mobile Dental Clinics as part of their final year undergraduate curriculum.



Dr. Roger L. Ellis, Chairman, Dept. of Dental Health Care, University of Alberta, Faculty of Dentistry

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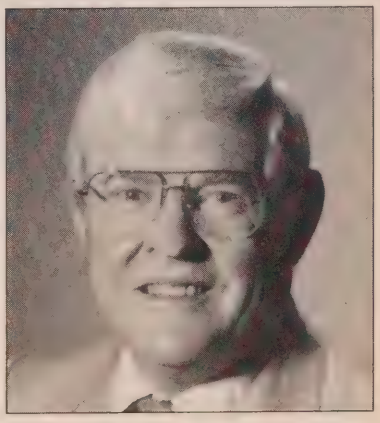


Dr. Tom Curry, Dental Director, Alberta Social Services & Community Health

Mobile Dental Clinic — High Level, Alberta

Mobile Dental Clinic Interior

Dental Students, Hygiene Students, Support Staff, Dentist/Supervisor Mobile Dental Clinic Program

HISTORY

As far back as 1969, the Faculty of Dentistry at the University of Alberta felt that there was a great need for reinforcement of dental education experiences by relating them to human patterns of seeking dental service and the ecology of the community in which the dentists practice. At the same time, there were many areas of the province where there were inadequate or nonexistent dental care services.

As a result, a formal proposal for a Mobile Dental Clinic program was drafted in February, 1973. The Council of the Faculty of Dentistry approved the proposal as an extension of the teaching facilities with the program being included as part of the undergraduate curriculum. Funding was sought and obtained from the then Department of Health and Social Development of the Government of Alberta who took on the responsibility for all costs, siting, site preparations, moving of units and making arrangements with local communities and their Boards. All other responsibilities, such as recruitment of dentist/supervisors, support staff, scheduling of students, accounting and the keeping of statistical information was left with the Faculty of Dentistry.

The University of Alberta received the first grant from the Government of Alberta in February, 1974. The first mobile dental clinic, consisting of two joined 54' × 10' trailers, were sited in Slave Lake. The following Alberta communities received dental services from this initial unit!

September 1974 – December 1974	– Slave Lake
February 1975 – April 1975	– High Level
September 1975 – December 1975	– High Level
January 1976 – April 1976	– Manning
September 1976 – April 1977	– High Level
May 1977 – April 1978	– Slave Lake
May 1978 – April 1979	– Manning
May 1979 – March 1980	– High Level

The Mobile Dental Clinic program was expanded in 1980 when the Government of Alberta funded two additional 70' × 14' operatory trailers with two attached 10' × 20' reception trailers. These mobile dental clinics are presently located in McLennan (pop. 1,500) which is 275 miles northwest of Edmonton and High Level (pop. 3,000) 500 miles northwest of Edmonton. The original trailers were completely refurbished and moved to La Crete (pop. 500) which is 140 miles southeast of High Level and are utilized full time during the summer program

and one day a week during the fall/spring program. All the Mobile Dental Clinic units are completely equipped with both up-to-date dental equipment and necessary support items.

In May, 1976 the first summer program was introduced in which selected dental students who have successfully completed their III Year in the dental program were employed to provide dental services to these same communities. Dental hygiene students who successfully completed I Dental Hygiene commenced employment in the summer of 1979 while II Dental Year students were employed as dental assistants in the summer of 1982.

A two week selective rotation was introduced in the 1984-85 year for senior dental students who have completed their clinical requirements in all disciplines. This voluntary rotation provides the students with additional experience in a private practice situation and further encourages consideration of taking up practice in other than large urban areas.

OBJECTIVES

The Mobile Dental Clinic program as well as a Dental Auxiliary Utilization Clinic program is a division of the Department of Dental Health Care of the Faculty of Dentistry. Both programs are an attempt to bridge the gap between a highly controlled educational environment and a more independent environment as it occurs in the dental practice. The overall objective of both clinical experiences is to allow the students to make more independent judgements concerning treatment in conjunction with both Faculty treatment policy and the particular needs and resources of the patient and be more individually responsible for such actions with the approval of the dentist/supervisor.

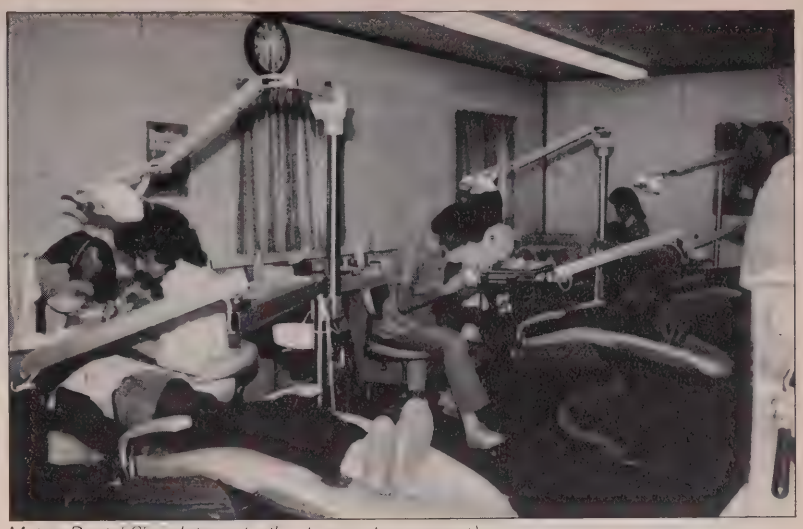
In the Mobile Dental Clinic, the student has the opportunity to provide services to segments of the population many of whom do not routinely receive dental care and as such might not have been accepted as patients at the dental school. In addition, the student is able to treat a larger number of patients a day than could be scheduled at the school's clinics.

Specific objectives with respect to the Mobile Dental Clinic rotation are as follows:

1) To allow the dental student the opportunity to provide comprehensive dental care to patients not routinely seen in dental school.

2) To allow the dental and dental hygiene student to provide care to patients who are dentally underserviced.

3) To allow the student to become more confident in his/her own ability as a clinician with greater responsibility for his/her own actions.



Mobile Dental Clinic Interior (without separating screens)

Dental Students — working in laboratory area

Dental Student — working on patient

4) To allow the students to recognize the health needs of underserviced patients and understand the reasons for these needs.
5) To allow students to experience professional and interpersonal relationships between ''dentists'', auxiliaries and patients in a non-educational setting.
6) To introduce and encourage dental and hygiene graduates to consider the possibility of taking up practice in a smaller community.

OPERATION

The Mobile Dental Clinics are open for 24 weeks in the fall/spring sessions (6 two week rotations per term) and 14 weeks in the summer program with clinic hours being 8:30 a.m. to 5:00 p.m. Monday to Friday.

Each of the staff on the Mobile Dental Clinics have certain defined duties and responsibilities. As a **team** each member is not only cognizant and proficient at his/her responsibility but is expected to be knowledgeable of those of the other members.

The dentists hired by the Faculty as instructors in the Mobile Dental Clinic program have a dual responsibility: a) to instruct and evaluate the students in the fundamental principles of the Mobile Dental Clinic and b) to supervise and instruct the students in current dental treatment techniques of the Faculty. The receptionist is the link between the Mobile Dental Clinic and the community and as such is hired locally. The receptionist is the overall co-ordinator of patient flow through the Clinic and of front office book-keeping and management.

The ultimate responsibility of the dental student is the provision of high quality dental services in accordance with current Faculty treatment techniques. The dental student in essence is the ''dentist'' for the Mobile Dental Clinic. The dental hygiene student is a key person in attempting to promote a preventive philosophy in the Mobile Dental Clinic program. A great deal of positive reinforcement must be used to encourage many of the patients who have not previously had easy access to dental care treatment or preventive dental care instruction. In addition, dental hygiene students provide a) chairside assisting duties for the dental students when required (one dental assistant is hired locally) and b) classroom dental health education instruction, when such opportunity is available, in co-operation with public health authorities.

Rotating students, and dentist/supervisors are housed in the respective communities in furnished apartment suites specifically rented on an annual basis for that purpose. The summer program in La Crete uses motel rooms with small kitchenettes since apartment suites are not available.

While the primary objective for the dental and dental hygiene students is an extension of their educational training into a more independent environment, the location of the Mobile Dental Clinics in underserviced areas provides dental care services to over 3,000 patients per year comprising all age brackets. A breakdown of different age categories and number of patients per Mobile Dental Clinic location is shown in **Table I** and **II**. While emergency treatment with resulting extraction is all too frequent, the students provide a wide range of dental care services to those seeking treatment with a number of patients now on recall as a result of the clinics being in the present location since 1980. The dentist/supervisor is in a position to provide a limited number of services that would be too difficult for the students in addition to his/her supervising role.

EVALUATION

Since the Mobile Dental Clinic program is an official course of IV Dental Year and II Dental Hygiene, student evaluation is an integral part of the program. Evaluation consists of two parts, namely: a) dentist/supervisor reports and (b) student reports.

The following criteria are evaluated by the dentist/supervisor:

1. Quality of Service – even though individual grades are not given for each dental procedure, quality of service still has a high priority using similar guidelines as exists in the different disciplines of the Faculty.
2. Utilization of Team Concept – dental students have the advantage of chairside assistants (support staff or dental hygiene student) for most patients' appointments while dental hygiene students carry out preventive procedures on dental students' patients or act as chairside assistants which requires co-operative action to maintain patient flow.
3. Patient Management – this area basically deals with how the dental or dental hygiene students handle patients.
4. Organization of Time – this area looks at whether clinic hours are utilized in a constructive manner and that appointments with patients are systematic and students are organized (properly planned treatment/assisting schedule).
5. Professional Demeanor – students are expected to carry out the Mobile Dental

TABLE I

Number of Patients – Fall/Spring Program Mobile Dental Clinics – 1982-83

	HIGH LEVEL	McLENNAN	La CRETE (one day/week)
Children under 5 years	27	46	0
Children 5-8 years	84	42	14
Children 9-12 years	101	56	43
Children 13-15 years	92	30	51
Adults	592	559	51
TOTAL	896	733	159

TABLE II

Number of Patients – Summer Program Mobile Dental Clinics – 1983

	HIGH LEVEL	McLENNAN	La CRETE
Children under 5 years	21	11	49
Children 5-8 years	65	57	54
Children 9-12 years	46	58	81
Children 13-15 years	28	42	176
Adults	375	351	142
TOTAL	535	519	502

TABLE III

Treatment Services – Fall/Spring Program Mobile Dental Clinics – 1982-83

	HIGH LEVEL	McLENNAN	La CRETE (one day/week)
Prophylaxis	140	184	6
Restorations			
Temporary	155	25	2
Amalgam	1167	585	115
Composite	263	132	44
Extractions	508	544	71
Endodontics	36	33	3
Denture Units	26	33	0
Relines/Repairs	21	34	3
Orthodontics	18	5	6
Missed Appts.	82	79	10

Clinic assignment in a "professional" manner with respect to dress, cleanliness, vocabulary and other areas dealing with both staff and patient rapport.

The dentist/supervisor provides a report on each student based on these areas upon completion of his/her rotation.

Both dental and dental hygiene students provide reports upon completion of their rotation including the following areas:

1. General Description of Rotation Activities – this is primarily related to activities in the Mobile Dental Clinic but can include such as hospital activities, teaching in schools, community activities, etc.
2. Number and Type of Patients Seen – this gives an indication of the breadth of experience gained in dealing with number of patients per day, range of age groups, socio-economic variations, difficult patients, medical complications, etc.
3. Number and Type of Procedures Done – this gives an indication of the variety of procedure done, procedures per appointment, new experiences, complications, if any, and how handled.
4. Relationships With Other Staff – includes how the student interrelated with receptionist, assistant, other operators and with dentist/supervisor as a method of getting feedback on staffing of Mobile Dental Clinics.
5. General Comments – includes constructive criticisms and/or positive aspects of the overall program, objectives or regulations.

The dentist/supervisor reports and the student reports each count as 50 per cent toward the mark in the Mobile Dental Clinic course and are to be handed in within two weeks after the rotation.

TABLE IV

Treatment Services – Summer Program Mobile Dental Clinics – 1983

	HIGH LEVEL	McLENNAN	La CRETE
Prophylaxis	90	143	99
Restorations			
Temporary	100	71	48
Amalgam	519	503	716
Composite	173	119	250
Extractions	257	318	427
Endodontics	11	20	9
Denture Units	33	18	33
Relines/Repairs	13	15	27
Orthodontics	3	9	10
Missed Appts.	89	52	92

CONCLUSION

The Mobile Dental Clinic program has now completed the tenth year of operation as of April, 1984. Co-operation from the local hospitals, the communities and the public health units has been given freely and voluntarily. The academic staff, final year dental and dental hygiene students have become more enthusiastic with each year of operation. Changes and improvements in the operation of the Mobile Dental Clinics take place on a continuous basis with a more efficient and effective result for both students and patients.

The Mobile Dental Clinic program continues to achieve its objective for the Faculty of Dentistry by providing a unique educational experience for the students. At the same time a very acceptable and needed service for selected underserviced areas has been made available where previously it was not readily at hand. Partially as a result of the Mobile Dental Clinic program, new graduates have less hesitation to venture into smaller Alberta communities to set up private dental practices.

ACKNOWLEDGEMENTS

The Mobile Dental Clinic program out of the University of Alberta is a joint venture of the Faculty of Dentistry and the Department of Social Services and Community Health, Government of Alberta. Full financial support from the Department of Social Services and Community Health for this educational and community service program is gratefully acknowledged.

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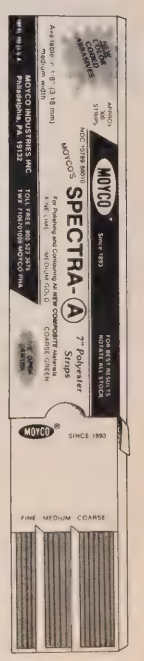

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BIRDS OF A FEATHER

Dr. Deedrick is shown at the controls of his restored Harvard aircraft.

When he is not practising the art and science of dentistry, Dr. Dalton Deedrick of Lacombe, Alberta, is out practising snap rolls and humpty-bumps.

And no, snap rolls and humpty-bumps are not the latest dental techniques, but are all part of Dr. Deedrick's other life. He is a private pilot who not only flies in a conventional way, but also flies in formation or upside down doing aerobatic manoeuvres, such as those mentioned above.

Dr. Deedrick, 63, began his love affair with flying during the years of the Second World War, when he was a flying instructor with the RCAF. Following his discharge from the forces, he went on into dental school, graduating from the University of Alberta in 1950. Once established in his general practice in Lacombe, which he still maintains, Dr. Deedrick took up flying as a hobby.

In the years since the war and since his graduation, he has shared ownership in a

Dr. Deedrick has also shared ownership of a Cessna 172, such as the one pictured here.

Piper Cub, an Aeronca, a Pacer, a Cessna 170, three Cessna 182s, a Beech 18, an aircraft he built himself called a "Turbulent," and a Harvard. During the Second World War, Harvard aircraft were used in the training of pilots.

"The Harvard, in which I have shared ownership for the past ten years, has provided the most pure fun, as it has allowed me to participate in airshows from Winnipeg to Abbotsford, doing formation or aerobatic flying," Dr. Deedrick told the Journal.

His hobby has also provided Dr. Deedrick with the means to travel extensively. In his various 4-seat Cessna 182s, Dr. and Mrs. Deedrick and friends have visited both coasts of Canada and the U.S., Alaska and even Costa Rica.

In 1981, Dr. Deedrick, Dr. Rolf Yri, a fellow pilot and dental colleague from Delta B.C. and two more private pilots, tried to go to Britain by the north Atlantic route. The trip had to be abandoned that year, but the same group was successful in completing the trip in June of 1984.

The 1984 trip was to Birmingham, England for a Rotary International Convention. However, Dr. Deedrick says, the Convention was only the excuse: the real reason was to fly. For that trip, the four men used a Cessna 320, twin engine aircraft. While in Britain, Dr. Deedrick also found time to attend the British Dental Association convention.

Dr. Deedrick, at one time President of the Alberta Dental Association, has also done extensive work as a volunteer dentist in several third world countries, mainly through the Rotary International and the joint sponsored CDA-CIDA program. As a volunteer dentist in these programs, he has done service in Tanzania, East Africa, St. Lucia and the Philippines (JCDA, Vol. 49, No. 11, 1983.)

Of all his dental and flying experience, Dr. Deedrick says "Truly life has been wonderful. I hope the young dentists graduating today gain as much satisfaction from their jobs and as much pleasure from their hobbies as has been my lot."

Editors note: *All photographs, except the cover photo and the photo of Dr. Deedrick in his Harvard, are courtesy of the Canadian Owners and Pilots Association, Ottawa, Ontario. Special thanks go to Mr. William Peppler, Manager, COPA.*

Among the other planes in which Dr. Deedrick has had a share over the years is a Beech 18, similar to the one shown in the photographs.

A Cessna 182 such as this one took Dr. Deedrick and his wife to several points of interest, including Alaska.

A Piper Cub, such as the one shown here, has also numbered among Dr. Deedrick's aircraft.

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*Douglas, W.H. A.A.D.R. March 1982 Abstract No. 450

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*Tous les chiffres du RADC s'entendent au 31 décembre 1984.
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Le présent texte a été approuvé par nos consultants/courtiers et nos assureurs.

DISMISSAL FOR THEFT

DISCUSSION

The following article is reprinted, with permission, from the Employment Law Report, Vol, 5, No. 4, April 1984. Copies of this article are available from Concord Publishing Ltd., 70 Yorkville Ave., Toronto, Ontario, M5R 1B9.

Employee theft continues to hold a dominant place among the concerns of employers. This article examines the employer's rights in dealing with employee theft and the limitations on those rights. Subjects specifically addressed include the employer's right to:

- maintain surveillance of employees;
- investigate employee theft;
- arrest and detain employees;
- dismiss employees who steal.

While employee theft clearly constitutes just cause for an employer to fire an employee, proving theft can present a challenging hurdle to employers. We therefore, consider:

- how employers prove theft either in the criminal law process or civil law process;
- how the criminal and civil law processes differ; and
- which circumstances determine whether the civil or criminal law process applies to theft in wrongful dismissal cases.

The element of trust in the employment relationship

The employment agreement between employer and employee is a contract, whether written or oral, express or implied. This contract requires an employee to fulfil certain fundamental obligations. Some of these obligations are:

- to work;
- to obey the employer's reasonable orders and directions;
- to be punctual, competent and sober;
- to protect the employer's best interests; and
- to be honest and trustworthy.

Employee theft primarily involves a breach of the obligations to be honest and trustworthy. These obligations are generally implied in the employment agreement. It is hardly necessary for the employer to express explicitly that the employee must not steal the employer's property. In the usual employment situation, the employer places confidence in the employee and entrusts its property to him. In this context judges and labour arbitrators have sometimes regarded employees as trustees for their employers. This means that courts expect employees who have access to, or possession of the employer's property to treat it with due care and as directed by the employer.

How do courts deal with employee theft?

Employee theft, being an instance of dishonesty and wilful misconduct, is severely dealt with by the courts. ''Wilful misconduct'' is that done with knowledge or with reckless disregard for, the consequences of that conduct. Judges regard theft as destroying the trust relationship between employer and employee. The employee who steals from his employer breaches his employment contract, and the employer is entitled to treat that contract as having been terminated. For these reasons, an employer firing an employee for theft does so for just cause, and need not give the employee either termination notice or payment instead of notice. In addition to being fired, the employee can be charged with theft under the *Criminal Code*.

What is the effect of employment standards legislation?

The federal government and all the provinces have enacted statutory minimum notice periods for individuals whose employment is to be terminated. However, no statutory notice is required where the employee is fired for wilful misconduct such as theft.

The employer suspecting theft: What investigative steps can it take?

Employers in both unionized and non-unionized settings have utilized various measures to investigate employee theft. In the union setting, management has hired private investigators to monitor suspected employees; security guards and co-workers have detected instances of theft; employers have requested help from police, who have conducted their own investigations and obtained warrants to search the homes of suspected workers. In a non-union situation, one employer used a hidden camera

to videotape a cashier stealing money tendered by customers.[1]

While there are relatively few legal prohibitions in Canada against close surveillance of employees, certain kinds of surveillance are illegal. Wiretapping by the employer when the employer is *not* a party to the conversation is prohibited by the *Criminal Code*. This means that under the Criminal Code, it is not legal for a person (employer) to tape a conversation between other people. However, it is legal for a person (employer) to tape one's own conversation with another person without telling the other person that the conversation is being taped. In other words, it is legal for people to tape their own conversation but not the conversation of others. Since investigative measures may breach other laws such as human rights legislation, it would be prudent for employers to obtain legal advice before implementing such procedures.

What legal action can an employee take against an employer for its use of investigative measures?

An employer's attempts to search the employee's *person or property* may result in the employee suing the employer for damages.

The Employee's Person

If an employee is detained, searched or even touched by an employer without the employee's consent, the employee may sue the employer for:

- assault; and/or
- false arrest and false imprisonment.

If the employee's lawsuit is successful, the employer will be required to pay damages to the employee even if the employee proves no specific loss or damage.

The Employee's Property

If an employee's property is searched by an employer without the employee's consent the employee may sue the employer for trespass to property.

Assault

Merely touching a person without his consent can be assault.

False arrest and false imprisonment

False arrest and false imprisonment mean the intentional confinement or restraint of a person within fixed boundaries without that person's consent or without legal justification. Restraint may be accomplished by direct force, or the threat of force to which the person submits in order to avoid force or embarrassment. "Fixed boundaries" can mean a room, a car, or anywhere from which there is no reasonable means of escape without the use of force. If the employee sues for false arrest and imprisonment, he will have to prove to the judge that he was arrested and restrained; the onus will then shift to the employer to prove justification for the arrest.

Trespass to Property

The action for trespass to property involves property only. Therefore, in a situation where the employee's person is not involved – perhaps the employee is not even present while his property is being searched, the employee would sue the employer for trespass to property. However, if the employee is either detained or searched *along with his property*, he would probably also sue the employer for false imprisonment.

The false arrest, false imprisonment and trespass to property actions are private (or civil) matters between the employer and employee. They are not criminal matters. (The distinction between civil and criminal matters is discussed further in this article).

Are there any defences to employees' lawsuits against employers for false arrest and false imprisonment in cases of theft?

Yes. There are two defences:

- the employee's consent; or
- the employee is found in the act of committing theft.

Consent

A justification for detaining a person is that he consented to the detention. The employer may show that the employee agreed to remain and clear things up, or agreed to a search. Whether there was consent or not will be decided by the judge. Where the employee complies out of fear of the consequences of not doing so, then a judge may decide that no valid consent was given. In other words, mere acquiescence will not be consent.

The employee is found in the act of committing theft

Aside from consent, the Criminal Code grants the only other justification for a private citizen or corporation to make an arrest. For example, under the Code, an owner or person in lawful possession of property (employer) may arrest without warrant a person (employee) whom he finds committing a criminal offence on or in relation to that property (theft for instance). "Finds committing" means that the person must be in the process of committing the theft when apprehended; if he is not, as may be the case if stolen property is not found in his possession, the employer may be liable for false imprisonment. In other words, the private citizen's power of arrest is extremely limited.

How does the employer obtain the employee's consent to search his property?

Some employers, concerned about their right to search the employee's property such as lunch boxes, brief cases, purses, bags etc. have taken the following precautions:

- Making the right to search a term of the employment contract;
- Incorporating the right to search into employee manuals; and
- Posting notices that personal possessions must be either deposited in a room before entering the work area or be subject to search by the employer.

Employers have used these same means with respect to lockers located on employer's premises. Employees are notified that lockers remain the property of the employer and are subject to search at any time. Accordingly, employees are advised not keep anything in the lockers which would prove embarrassing in the event of a search.

However, regardless of contractual terms and posted signs, complications can arise if employees refuse to open bags or lockers etc. Therefore, employers should be prepared to deal with such situations. For example, they should know when they may or may not detain an employee, whether to call the police etc. They should also be aware of the seriousness of threatening an employee with criminal action to produce a civil result. For example, if an employer finds an employee stealing or suspects an employee of stealing, it would be improper for the employer to threaten the employee that the employer will call the police (criminal action) if the employee does not sign a resignation (civil result).

Before implementing search measures, an employer should obtain legal advice as to:

- the content of employment contracts, manuals and signs;
- the circumstances under which an employer can search an employee or his property; and
- the proper procedures to follow during a search.

Must the employer firing for theft prove just cause?

If the terminated employee does nothing and accepts the dismissal, that is the end of the matter. The onus is on the employee to commence an action in the courts against the employer for damages for unjust dismissal. At trial, the employee must show:

- he was in fact an employee; and

[1] *Meszaros v. Simpson Sears Limited* 19 A.R. 239.

- he was dismissed without reasonable notice.

If the employee satisfies the court on these two points, the employer must then defend himself by demonstrating just cause for dismissal. In other words, the employer will be required to prove the employee was guilty of theft.[2]

Proving theft in an unjust dismissal case: Must the employee be charged with theft in criminal proceedings?

No. Because civil and criminal matters are two distinctly different kinds of proceedings, *one is not a prerequisite to the other*. Even if an employee is *neither charged nor convicted of theft in the criminal courts*, an employer can still fire an employee for theft. However, should an employee be convicted of theft in a criminal court, a conviction will certainly be compelling evidence of the employer's just cause for dismissing the employee in an action of wrongful dismissal. Therefore, an employer defending a wrongful dismissal action may prove employee theft to the court in the following ways:

- by showing that the employee has been convicted of the theft under the *criminal* law; *or*
- by the employer himself proving the theft under the *civil* law.

Under which circumstances does the civil or criminal law process apply to proof of theft in wrongful dismissal actions?

As indicated previously, employers may introduce the employee's criminal conviction as proof of theft in a wrongful dismissal action. Indeed, many employers would probably welcome the opportunity to do so. However, because theft is more difficult to prove under the criminal law than under the civil law, (for reasons discussed under the following heading) a criminal conviction may not be forthcoming. The employer may then attempt to prove the theft under the somewhat less rigorous standards of proof of the civil law.

Why is proving theft more difficult under the criminal law than under the civil law?

The criminal law has a heavier burden of proof (heavier onus to prove) than the civil law.

The Criminal law burden of proof

The employee charged with theft in criminal proceedings will be convicted only if the evidence demonstrates *guilt beyond a reasonable doubt*.

The civil law burden of proof

Because an action for unjust dismissal is a civil proceeding, the burden of proof is less onerous than under the criminal law. Theft must be shown *on a balance of probabilities*. In other words, the evidence must show that *more likely than not*, the employee was guilty of theft. Accordingly, it is easier to *demonstrate theft to establish just cause* in civil proceedings than it is to prove guilt at a criminal trial. For this reason, an acquittal in criminal proceedings may not always prevent an employer from proving theft as just cause in an unjust dismissal action.

It should be noted that, although the civil burden of proof is proof on a balance of probabilities, some allegations will require more proof than others. For example, where the conduct to be proved is serious, as is the case with fraud or theft, some judges may insist on more proof than they would in cases of less serious conduct, such as insubordination or negligence.

Is an employer justified in firing an employee on only a suspicion of theft?

No. The employer cannot justify summarily firing an employee based on mere suspicions of theft or dishonesty. However, an employer may dismiss an employee suspected of theft or dishonesty if the employer gives the employee due notice or pay in lieu of notice.

How do the criminal and civil law processes differ in the treatment of theft?

As stated earlier, the employee who steals from his employer is liable to a charge of theft under the *Criminal Code*. A criminal act is an offence against the state and not just against any specific individual. The state wants to punish the offender in order to deter him and others from committing similar offences. Criminal proceedings are usually instituted and prosecuted by the *state* and *not by the person* injured by the offender's conduct.

A civil wrong, however, unlike a criminal offence, is a *private* matter between two or more persons. A civil action affords an injured party the opportunity to sue for *damages*. The employee's action for unjust dismissal is an example of a civil action.

Evidence arising after the employee is dismissed

In a case[3] that went to the Supreme Court of Canada, an employer dismissed an engineer with notice. Subsequent to the dismissal, the employer discovered that during his employment the employee had fraudulently back-dated a letter in order to incorporate into it, terms of an earlier agreement. The Supreme Court of Canada ruled that while the employer had given proper notice, because of the employee's fraudulent manner of back-dating the letter, the employer would have been justified in dismissing the employee *without* notice even though the employer did not know of the action until *after* he fired the employee.

It would seem from this Supreme Court decision that employee misconduct amounting to just cause for dismissal without notice, may be relied on by an employer to support the dismissal at trial *even though the employer was unaware of the misconduct when it dismissed the employee*.

What kind of property can be stolen?

There is still controversy among lawyers whether certain kinds of conduct fall under the definition of theft in the *Criminal Code*. For example, only property is capable of being stolen. An issue recently arose as to whether an employer's confidential information is property.[4]

A union attempted to organize the workers at a hotel. The hotel managers barred the union from the hotel and even charged one union representative with trespassing. The union, in order to solicit new members, required the names, addresses and telephone numbers of hotel employees. That information was contained in the hotel's personnel record files and on a computer print-out; the information was regarded as strictly confidential by hotel management, and was kept under lock and key. The union asked a consultant to attempt to obtain that information. The consultant contacted a security worker at the hotel and offered him money to copy the information. The actual employee records were to be left intact, as the consultant only wanted the information contained in those records. The consultant was found out, and was convicted of counselling the security worker at the hotel to commit theft. The appeal court decided that confidential information gathered through the expenditure of time and effort by a corporation in the course of its business, was property belonging to the corporation and was capable of being stolen. In other words, had the security worker copied the information, he would have been guilty of theft under the Criminal Code.

The consultant's conviction is now being appealed to the Supreme Court of Canada.

[2] For a case example, see The Employment Law Report, Volume 4, July 1983, pp. 53, 55. See also The Employment Law Report, Volume 2, April 1981, p. 27.

[3] *Lake Ontario Portland Cement v. Groner* 28 D.L.R. (2d) 589 S.C.C.

[4] *R v. Stewart* (1983) 5 C.C.C. (3d) 481.

COMMERCIAL REAL ESTATE

by Douglas McEwan

DISCUSSION

The commercial real estate market is the most lucrative and competitive area of real estate development. Along with profitability go the extra risks of higher cost ventures but there are ways of minimizing risk during the crucial learning process.

Commercial real estate breaks down into two basic categories; retail and office. Retail space is more profitable but is subject to more constraints, i.e. stores are usually located only at or close to ground level to be easily accessible by the public. Office space can be stacked in a high rise configuration getting more area per unit of site.

Very large commercial developments require very large amounts of capital, as well as years of planning, and are therefore restricted to the largest development companies. Participation in such projects for the small investor would be limited to share ownership in such companies and we shall not therefore deal with such projects in this article. Rather, the more feasible small plaza and office development which follow the expanding borders of urban development and redevelopment are what we shall be looking at.

Commercial retail development is more profitable than either industrial or residential because of the higher productivity of return for the user. A good retail outlet has income which allows him to pay a much greater rate per square foot of rent. Whereas the best rental rate for industrial space in the Toronto area may be $4.00 – $4.50/sq. ft./yr. and $8.00 – $10.00/sq. ft./yr. for residential, the rate for retail is likely to be closer to $10/sq. ft. The cost of the building for a moderate class small plaza may be $40 – $45/sq. ft. while costs for an industrial building are in the range of $35 – $40 and a residential apartment may be $50 – $55/sq. ft. The construction costs are therefore similar but the rents much higher for retail space.

This difference in profitability is reflected in the cost of land. Top serviced industrial acreage in a prime location may sell for up to $250,000/acre while good commercial acreage for plaza development will sell for $400 – $500,000/acre, almost twice as much. Still even at these prices, the higher rate of return makes commercial development more profitable.

While location is always of prime importance, the location of the property is more important to the success of a commercial development than to any other. Exposure to the vehicular and pedestrian traffic which constitutes the market to a seller is everything. The commercial developer searches for the best location and is willing to pay a premium for a good site. Knowing this, commercial land prices have seen a sharp rise in recent years. Whereas, the top price paid for a one acre commercial lot was $300,000 – $350,000 five years ago, secondary sites now command prices in the $400,000 – $500,000/acre range. This trend will probably continue as even at these prices, development is still very profitable.

Because a good location is critical and competition for sites stiff, finding one is the major challenge and an investor must be prepared to move swiftly. Most good commercial locations are not even listed for sale because word of mouth interest makes listing unnecessary. A recent sale of a 1.26 acre commercial site in Markham resulted from three competing offers on the property within 3 weeks of the *rumour* it would be put up for sale. (See the accompanying cost-return analysis).

It is important when considering a site to have in mind the type of development which would be most suitable. Retail commercial developments can be broken down into four main categories, usually reflected in the zoning designated by the municipality:

1) **Highway commercial** facilities required by the travelling public i.e. restaurants, motels, hotels, gas stations, fruit stands, fast food outlets etc.

2) **Neighbourhood commercial** – small plazas deemed to provide services to an immediate surrounding residential suburb, i.e. cleaners, convenience stores, barber, hairdresser, etc.

3) **District Shopping Centre** – a 10,000 – 30,000 sq. ft. plaza providing retail outlets for a population of up to 25,000 people i.e. clothing store, furniture stores, travel agencies, appliance stores, etc.

4) **Regional Shopping Centre** – large retail shopping centres, often enclosed malls, offering a complete range of retail outlets and characterized by large anchor tenants i.e. The Bay, Simpsons, Eatons, Miracle Mart, etc.

It is important to check with the governing municipality regarding what commercial uses are allowed. Pay particular attention to the coverage allowed (the ratio of building area to site area) and the parking requirements. Most municipalities in the Toronto area require one car parking space for each 300 sq. ft. ± of building. The coverage ratio, parking requirements and setbacks are the major factors determining the size of building that can be built on a given site.

It is important to think of a site's potential from the point of view of the leasee and, by inference, the consumer. Is the site accessible, readily visible, is it close to residential areas?

Vehicular access is important and commercial zoning follows major routes of traffic. Indeed, the capacity and type of roadway adjacent to the site bears a direct correlation to the size of development possible i.e. a neighbourhood plaza is suited to

a corner in a residential street pattern whereas a regional mall would require one and preferably the intersection of two expressway-type roads.

Existing major roads and planned new roads are therefore the keys to finding a site suitable to develop. Roads and the expanding boundaries of urban development are where most sites become available. As population and building grow, the support services require the development of commercial land and municipalities set zoning to suit. The contemporary trend to redevelop existing downtown properties reminds us to think of "the expanding boundaries of urban development" not just in terms of first time development but in terms of new dynamics in growth.

Another good source of commercial sites is within newly planned residential subdivisions. Municipalities usually require residential developers to designate a certain portion of their subdivision to parks, schools and neighbourhood commercial sites. These are an excellent source as such lots are usually ideally sized to suit the small investor, and the surrounding residential development provides a ready market.

Keep in mind that a site need not be currently zoned commercial in order to make it attractive. Pockets of land zoned residential or industrial in existing urban areas may have great commercial potential. In this case the proper approach would be make an offer to purchase "conditional" upon a successful rezoning to the desired commercial. Making the offer first allows the buyer to tie up the land while the rezoning process is being carried on. Often the property can be purchased at a price more in keeping with the existing use. Further, it gives the purchaser more clout with the municipality in negotiating the desired zoning change. This process is more risky and time consuming than purchasing an existing commercial site but given the scarcity of sites, it may be necessary. If the process is successful the purchaser immediately experiences increased equity in the enhanced value of the rezoned property. As mentioned in a previous article, remember that an offer to purchase can be made on any property whether listed for sale or not. Don't feel limited to what is listed for sale, think in terms of what *any* site *has potential for*.

Syndications are an excellent vehicle by which to learn the process of commercial development. Numerous, experienced commercial developers are increasingly offering syndicated shares in their venture as a means of raising capital. This offers the small investor a chance to become involved in development with a relatively small amount of cash. Handled by the professionals at the start, the novice has a chance to watch and learn from the privileged perspective of a participant. With increased equity and the confidence of experience, the investor may choose to remain within a group, form a new group with a larger equity and participatory role or even undertake a development on his own.

It is advisable to investigate various investment groups and analyze the legal and structural format of such groups before even looking at property. Find a group whose relationships are structured to provide you with the kind of investment and experience potential you want out of it. Assure yourself of the background and experience of the other participants. Ensure that personal compatibility and trust in the principles is possible. You do not want to become financially involved with a group of people with whom you do not feel a rapport. Once you feel comfortable with the arrangements of the group and the size and role of your involvement, then you can begin to consider potential developments on their merit alone. This is important because, as mentioned, good commercial developments come and go very quickly. You must be ready to move when opportunities arise. You can only do so if you are comfortable that all related matters are satisfactorily resolved.

In summing up, the major points to remember regarding commercial property development are:

1) Commercial real estate offers high rates of return because *rental rates are much higher* than residential or industrial.

2) *Location* is the whole key to a commercial development's success.

3) Check out *municipal zoning requirements* to determine the size and type of development possible.

4) Think from a *consumer's point of view* when evaluating what type and configuration of development would be suitable.

5) Be ready to *move quickly* on possible ventures as the market is very competitive.

6) *Syndications* are an excellent vehicle for the novice investor and developer, but check out the group's structure first.

The commercial development market is very lucrative and the next few years should provide good investment potential. A major indicator of optimism is the fact that a number of large Canadian commercial developers are undergoing major projects and redeveloping existing ones. Their involvement indicates that the future looks good for the commercial real estate market.

COMMERCIAL PLAZA PROPOSAL

LOCATION: SOUTH SIDE OF HWY 7 @ BULLOCK DRIVE (1/4 MILE WEST OF MCCOWAN AVE.)

1.26 AC × 43560 = 54,885 S.F.

SIZE OF PROPOSED PLAZA: 54885 S.F. (SITE) × .30 (COVERAGE) = 16,465 S.F.

PROJECTED INCOME BASED ON CURRENT AREA LEASE RATES @ $20/SF NET, NET +16465 S.F. × $20.00 = $ 329,300 GROSS/YEAR

COST OF LAND	$552,000
CONSTRUCTION COST:	
16465 S.F. × $38/SF	$625,670
SOFT COSTS:	
LAND SERVICES	20,000
REZONING APPLICATION	10,000
CONSULTANT FEES	120,000
LEGAL (PREPARE LEASE ETC.)	25,000
COMMISSIONS (LEASING, SALES)	50,000
MARKETING	50,000
INTEREST CHARGES (12 mos. DURING CONST.)	85,000
TOTAL PROJECT COSTS	$1,537,670
SALE PRICE OF COMPLETED PROJECT BASED ON 10% RETURN ON ALL CASH DEAL.	$3,293,000
COST OF PROJECT	1,537,670
PROFIT UPON SALE	$1,755,330
SALE PRICE OF COMPLETED PROJECT BASED ON 15% RETURN $1,000,000 ON DN. & FINANCE OF BALANCE.	
$1,000,000 × 15%	150,000
NET RENT FOR FINANCE CHARGES – 329,300 – 150,000 = 179,300	
MORTGAGE CARRIED BY 179,300 @ 13% = $1,358,000 ±	
THEREFORE SALE PRICE	$2,358,000
COST OF PROJECT	1,537,670
PROFIT UPON SALE	$ 820,330

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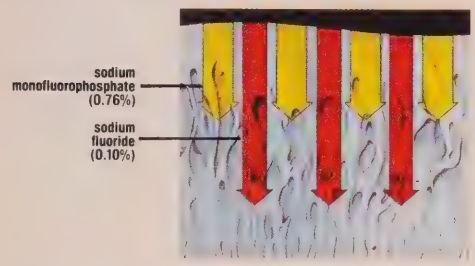

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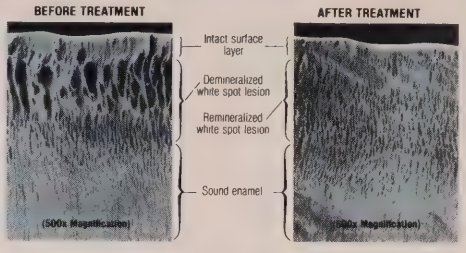
This complementary action means more fluoride is available to enhance remineralization over a greater depth of the lesion than is provided by either fluoride alone.[5,6]



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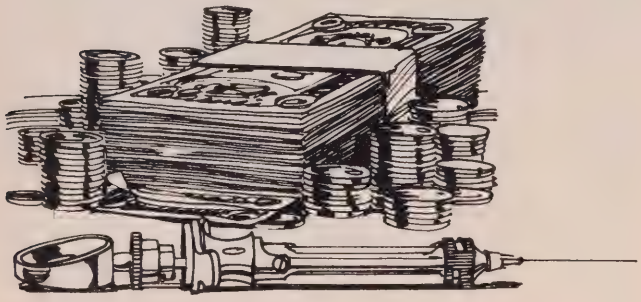

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PAAB

TIME FOR ACTION ON PENSION REFORM

The following article, taken from the December 1984 issue of the Mercer Bulletin, is reprinted here as an excellent commentary relevant to all professional groups, including the dental profession.

The CDA, through the Taxation Committee, along with groups such as the Canadian Medical Association, the Canadian Bar Association and the Canadian Institute of Chartered Accountants, have been making representations to the federal government on the subject of taxation and pension reforms for some time. It is expected that a joint committee, with representation from CDA and other concerned professional groups, will continue to press the federal government for important reforms in the areas of taxation and pensions.

DISCUSSION

It is high time that the federal and provincial governments took action to implement the more moderate of the proposals for pension reform, those on which general agreement has been reached. We have been living in limbo for far too long. As consultants we have often been asked by employers whether they should review and amend their pension plans without further delay or wait to see what the law may later require. Employers are reluctant to anticipate the government's actions and to bring in desirable changes in their pension plans, in case they may soon be required to make yet further improvements at yet more cost. Nevertheless many employers have decided that they cannot wait indefinitely and have cautiously amended their plans in spite of the uncertainties. In some cases amendments were made necessary to comply with changes in Saskatchewan and Manitoba law. Other employers have been sitting on the fence for years. The uncertainty is not good for the economy and not good for the development of pension plans.

Moreover, the uncertainty is not without cost. As each set of proposals is revealed, plan sponsors, their administrators and their advisors try to appraise the proposals and ascertain the impact on their own pension arrangements. Should they amend the plan in an attempt to minimize the effects of the proposed legislation? Would they be better with a defined contribution plan? What are the likely costs of the forced changes? What are the chances that the proposed measures will be implemented? It is worth preparing a brief or other representation to government and if so to whom should it be addressed?

An immense amount of time and effort has been spent on these questions. There are signs that business people are exhausted by many years of debate on the subject, that they are now less interested in pension reform and that they are willing to pay any reasonable cost if the matter could be finally settled.

More would probably have been achieved had governments not attempted to swallow so big a mouthful all at once. Pension reform has been presented as one great package, embracing everything from early vesting, to compulsory membership, indexing for inflation, bigger government pensions, women's rights, and a dozen smaller items. Very properly, uniform legislation across Canada is considered of prime importance. If Canada were Utopia, the reform package would be enacted by all eleven governments at the same time, or at least by the eight governments that have Pension Benefits Acts in effect. To expect such uniform action on a long series of complex changes is a dream. It would be far more sensible and productive to break up the whole package into manageable parts, to be enacted in several steps.

A National Consensus

The long-drawn-out National Pension Debate has achieved one good thing — it has caused Canadian business to take a much more enlightened attitude towards pensions. Further, employers and employees (together with governments) have made considerable progress towards a consensus on what should be done.

It is unlikely that there would be serious opposition from business or other groups to the immediate adoption of certain important amendments to the Pension Benefits

Acts. These include the vesting of pensions after 5 years of service (or even after 2 years); locking-in contributions when vesting occurs; a requirement that normal pensions be in joint and survivor form (with actuarial reductions allowed); continuation of survivor's pension after remarriage; and adequate disclosure of pension information to plan members.

The achievement of uniformity in these areas should not be difficult to attain. However it will require give and take between the various authorities – perhaps more so from Manitoba and Saskatchewan. These two provinces got tired of waiting, for which they can hardly be blamed, and put their own pension reforms into effect. In the national interest all the governments involved should be flexible in a spirit of compromise. Clearly the differences between the economic and social conditions in different parts of Canada are not so great as to justify legislation on private pension plans that varies by province. Lack of uniformity helps nobody – it is troublesome to employers, adds to administration costs and is confusing to employees, especially those who are mobile.

The items mentioned above should be put into effect at an early date. The controversial areas – such as indexing for inflation, compulsory membership and unisex mortality – should be dropped or deferred for further study.

The Canada Pension Plan

The federal government will be forced to act before long on two aspects of the Canada Pension Plan. First, the CPP contribution rate must be raised, even if the benefits are unchanged. The benefit outgo now exceeds the contribution income, so we are beginning to spend some of the interest earned by the Canada Pension Plan Investment Fund. Even if we do not continue to build up the fund, the contribution rate must rise from the present 3.6% to about 6.0% in 15 years and 9.0% in 35 years time – considerably more if the plan is liberalized. The provinces, anxious that their borrowings from the CPP fund should not be reduced, favour still higher contributions and a growing fund.

The second reason for action on the Canada Pension Plan is technical. Statistics Canada is replacing the Industrial Composite Wage Index, from which the CPP earnings ceiling is derived, by a new Industrial Aggregate Index, which is about 8% lower. Unless a change is made, CPP benefits will eventually be 8% less than before, which the public is unlikely to accept.

Two other suggestions for changing the CPP should be approached with caution. The homemakers' pension proposal bristles with difficulties and anomalies, although the leaders of the three political parties expressed their support in principle during the election. There are better ways of improving the pensions of women than this inequitable and expensive proposal.

Also, the government should resist the pressure to lower the commencement age for CPP benefits below age 65. Life expectations are improving quite rapidly. It does not seem logical to encourage early retirement when people are living much longer and enjoying much better health. The Quebec Pension Plan now allows the payment of a lower benefit from age 60, in hope of reducing unemployment, but it would be dangerous for the CPP to follow this lead. There would be pressure to establish age 60 as the age at which pensions from Old Age Security and the Guaranteed Income Supplement as well as CPP were payable, in which case the extra costs would be many billions of dollars.

The provincial ministers concerned with pension matters met on December 3rd in Toronto in a closed meeting. It is hoped that they reached agreement on a number of pension reform issues and will come back to the next meeting, scheduled for February 1985, prepared to "go public" with a firm set of uniform changes in legislation. They would be well advised to reject the controversial issues and legislate only where there is a broad consensus among governments and business groups.

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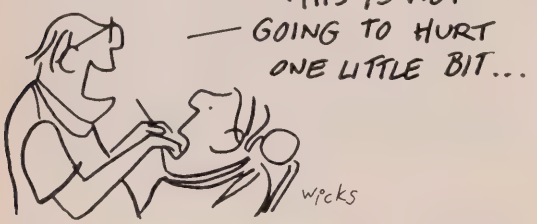

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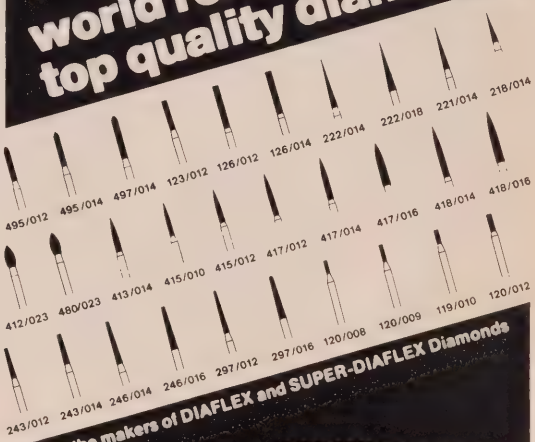

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ASPIRATION OF FOREIGN BODIES DURING DENTAL PROCEDURES

H.E. ElBadrawy, DDS, MS
Saskatoon, Sask.

ABSTRACT

A major hazard associated with the delivery of routine dental care is the possible aspiration of a foreign body with the potential of posing a serious health threat to the dental patient. The recognition of the signs and symptoms of an aspirated foreign body, as well as methods for prevention and management, are reviewed.

SOMMAIRE

L'aspiration de corps étrangers pendant la réception des soins dentaires est un des grands risques que court le patient. Ils pourraient affecter sérieusement sa santé. Le présent article passe en revue les signes et les symptômes qui permettent au dentiste de s'en rendre compte immédiatement, ainsi que les moyens de prévenir le danger et de contrôler la situation le cas échéant.

DISCUSSION

One of the major hazards associated with the delivery of routine dental care includes possible aspiration or swallowing of foreign bodies, with the potential of posing a serious health threat to the patient.

Swallowed foreign bodies do not usually pose a life-threatening situation. Once the body has safely entered the stomach, uneventful passage can be expected in the great majority of cases, although the possibility of perforation exists in the case of swallowed instruments or partial dentures with clasps. Aspirated foreign bodies, on the other hand, have the potential for causing serious complications, including partial or complete airway obstruction which, in the absence of prompt measures, could result in brain damage, death, or at the very least, pulmonary infection.

Measures to minimize the possibility of aspiration as well as recognition of the signs and symptoms associated with an aspirated foreign body and an immediate plan of action are essential for all dental practitioners. The purpose of this paper is to review the literature on foreign body aspiration as well as its prevention and management.

Anatomical and Physiologic Considerations

The respiratory system consists of the lungs and air passages, which include: (a) the nasal cavity and paranasal sinuses, (b) pharynx, (c) larynx, (d) trachea and (e) bronchi.

The pharynx functions both in respiration and swallowing. In an unconscious patient, it is possible for the respiratory tract to become blocked at the level of the pharynx, either by the tongue falling backwards or by inhalation of mucus or vomited material into the larynx. The entrance to the larynx is guarded by the epiglottis which, during swallowing, directs food into the oesophagus. The lumen of the larynx can be closed partially or completely by the apposition of the vocal folds which close automatically if a foreign body passes the epiglottis and enters the trachea. Reflex coughing then follows in an effort to expel the foreign

body (this reflex is abolished during general anesthesia). The fifth part of the air passages, the bronchi, extend from the bifurcation of the trachea into all regions of the lung, becoming progressively smaller towards their periphery.[1]

Signs and Symptoms Associated With Foreign Body Aspiration

These include choking, gagging, coughing, signs of distress, and inspiratory stridor. Hoarseness will accompany laryngeal or tracheal obstruction with or without cyanosis, depending on whether the obstruction is complete or partial.

In the bronchial passages, atelectasis follows a complete obstruction, whereas in the case of a partial obstruction, a local purulent infection and finally an abscess will develop. Physical signs include little or no air entry, asymmetrical chest motion, dullness and tracheal shift.[2]

Foreign Bodies of Dental Origin

Foreign bodies of dental origin most frequently aspirated or swallowed include endodontic instruments,[3-5] dentures,[6-11] a tooth or fragment of,[12-14] rubber dam clamps,[15] and impression materials.[16]

As early as 1935, Stern[17] stressed that dental abscesses occurred when proper scaling and hygiene were not established as a pre-extraction precaution. Brock,[18] reporting on 363 cases of lung abscesses, also found dental sepsis to be a major etiologic factor, especially where multiple extractions are performed. He also stated that "local injections, particularly mandibular blocks, interfere with the sensation and movement of the palate and pharynx, thus favouring inhalation during the most vulnerable periods. The larynx may also be affected and the "watchdog of the lungs" is paralysed and defenceless". A later investigation by Scott[19] revealed that the most potent combination of factors favouring inhalation during extractions were head retraction, an inefficient pack, and multiple extractions in which back teeth were involved.

The influence of patient positioning was addressed by several investigators. There is no general agreement as to which position is most likely to cause aspiration. Neuhauser[20] states "It is obvious that supine patients are more or less prevented from swallowing", while others[21,22] report that the supine or semi-supine position increases the risk of accidental aspiration or swallowing of objects, and that a degree of protection would be afforded by the use of gravity.

Sedation, as is practised by many dentists, is also a factor. During outpatient dental procedures under local anesthesia, reliance is placed on protective reflexes to prevent aspiration of mouth contents into the lungs. In conscious but sedated patients, reflexes are maintained, since they retain the ability to gag, cough or swallow. On the other hand, their condition resembles that of patients who have recently recovered consciousness from general anesthesia and have been shown to have an impairment of the glottic closure reflex.[23,24] In a study of dental patients sedated with diazepam, it was reported that the competence of the laryngeal closure reflex is impaired for 5 to 10 minutes after the intravenous administration of 0.2 mg/kg of diazepam.[25] A study by Allen, Ricks and Jorgensen[26] also suggests that the use of narcotics in an intravenous sedation technique increases the hazard of aspiration. They also reported that no depression of the laryngeal reflex occurred in patients in whom nitrous oxide-oxygen was solely administered. Special caution is also advised when using narcotics in the elderly patient as protective laryngeal reflexes decrease with the advance of age.[27]

PREVENTION

The aspiration of a foreign body is a serious, potentially fatal complication and all possible measures should be taken to prevent such an occurrence. Surprisingly, the simplest and most effective deterrent — namely the rubber dam, is not used by a majority of dentists, even though such training is a routine part of undergraduate dental education in all schools in the United States and Canada. A mail and direct interview survey[28] of 2,271 U.S. dentists revealed that the rubber dam was never or seldom used 82.4 per cent of the time during restorative procedures, and 36.9 per cent of the time during endodontic procedures. A more recent survey[29] compared use of the rubber dam by older dentists with those who had completed their training more recently. The results revealed that 32 per cent of the recent graduates (age range 25-29) used the rubber dam routinely, compared to 29 per cent in the 30-39 age group and only 4 per cent in the 60-73 age group. The benefits accruing from the use of the rubber dam (of which prevention of foreign body aspiration is only one) have been well documented in all standard texts and by numerous investigators[3,4,21,30,31] to the point where, at present, it is inexcusable to render dental services without it.

The rubber dam clamp itself is at risk of being aspirated or swallowed, especially when ill-fitting or applied to a partially erupted tooth. Fortunately, preventive measures, if adhered to, render this possibility remote. A length of dental floss may be ligated to the bow or holes of the clamp, with a sufficient length hanging out of the patient's mouth, thus allowing retrieval of the clamp in the event it should fall into the pharynx.[15] Barkmeier et al.[21] recommend that the floss ligature be tied through both holes of the clamp so that if the clamp breaks in the bow area, both portions can be retrieved. Similarly, castings of two or more units can be secured by dental floss during try-in and adjustments.

A single cast crown, however, would pose some difficulty as there are no embrasures for floss ligation and the need to check the bite precludes use of the dam. Jacobi and Shillengburg[32] describe a method in which a small safety ring is made part of the casting of a single crown to which a length of floss can be tied during try-in and adjustments.

Another method of particular advantage during tooth extractions and adjustments of ready-made crowns is the use of a gauze screen to block access to the oropharynx.[33] The screen or "net" is not meant to function as a throat pack but rather is very lightly placed just posterior to the tooth to be extracted or crowned. With patients who have an exaggerated gag reflex who may not tolerate the gauze screen, positioning becomes an important consideration, and a more upright position with the patient's head turned to one side will allow a fallen object to fall to the floor or buccal areas rather than the oropharynx.[21]

Diagnosis of Aspirated Foreign Bodies

The diagnosis of aspirated foreign bodies depends on the signs and symptoms displayed by the patient as well as radiographic demonstration of partial bronchial obstruction which causes localized air trapping or atelectasis. Endotracheal foreign bodies are visualized directly on high kilovoltage radiographs of the airway or fluoroscopy. A high index of suspicion is necessary however, as visualization of a radiolucent foreign body (such as a denture) will not be possible on radiographs.[34] A valuable aid in localization would be the routine placement of a radiopaque disk in all acrylic dentures.[10]

Emergency Management

In the event that a foreign body is aspirated into the airway, a prompt orderly plan of action should be put into effect. Chipps[35] distinguished between a non-obstructive foreign body in the airway and an obstructive one, with the management differing in each instance. He recommended that when the obstruction is not complete and the patient's consciousness is maintained, the dentist is justified in seeking the aid of those better equipped and qualified to care for the patient. When the obstruction is complete, then prompt action is needed to remove the foreign body, if possible, or bypass the point

of obstruction by opening a secondary airway. Similarly, Nicholas and Rumer[36] have recommended a four-step plan, which includes recognition of the obstruction, non-surgical manoeuvres to relieve the obstruction, mouth-to-mouth breathing to overcome or diagnose a persistent obstruction, and establishment of an emergency airway. They and others,[37] as well as the Council on Dental Therapeutics,[38] recommend the cricothyroid membrane puncture rather than the tracheostomy procedure, as the former is simpler and more easily performed by the non-surgical practitioner.

Certainly, first and foremost in management procedures is the necessity for dentists and dental personnel to attain and maintain competency in CPR skills based on the standards set forth by the American Heart Association.[39] Such skills, when properly applied, could not only prove to be life-saving to the patient who has aspirated a foreign body, but also, may save the dentist from embarassment, litigation, disruption, and all unfavourable consequences that may result from such an incident occurring in the dental office.

Summary

The accidental aspiration of a foreign body by a patient during dental procedures is a serious complication with potentially tragic consequences for both patient and dentist. Such an eventuality can be prevented by adherence to simple preventive measures as part of routine dental care delivery. These would include:

1. Use of the rubber dam for all restorative and endodontic procedures.
2. Use of floss ligature for rubber dam clamps, for multiple unit bridges during try-in and adjustments, and for single crowns when a safety ring can be made part of the casting.
3. Use of a gauze "net" to block access to the oropharynx during extractions and crown fitting.
4. Consideration of the effect of patient position on the likelihood of aspiration and utilization of a more erect position for certain dental procedures when the dam is not in place.
5. Extra caution and close supervision of sedated patients, especially the elderly.
6. Attain and maintain CPR skills for management of an obstructed airway.

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1985 CDA CONVENTION
GRADUATE STUDENT PRESENTATIONS

PREAMBLE

At the 1985 National Convention, the Canadian Dental Association is organizing a forum which will allow graduate students to present current information on their specialty or research projects.

ELIGIBILITY

Dentists or dental hygienists who will be enrolled, as of September 1985, in the final year of a graduate program, at a Canadian university.

METHOD

Interested students should submit a typed abstract of a 15-minute presentation describing a current aspect of their major area of study or research activity. This should be accompanied by a black and white passport photograph, a curriculum vitae, and a letter from the Director of Graduate Studies verifying:

1. The enrollment status of the student;
2. That the presentation represents graduate work performed by the student;
3. An estimate of anticipated travel and accommodation expenses.

The abstract and supporting documents should be forwarded to the following address before April 30th, 1985:

Dr. John Hardie
Scientific Chairman
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario. K1G 3Y6

NOTIFICATION

The Scientific Committee of the 1985 Convention will choose eight presentations which represent a spectrum of dental graduate studies being undertaken in Canada. Successful students will be notified early in June 1985.

AWARD

Successful applicants will be invited to present their papers during the Scientific Program of the 1985 Convention which will be held in Ottawa from September 29th to October 2nd. The students will be the guests of the Convention Committee during the day of the presentations. If necessary, funds will be available for travel and accommodation.

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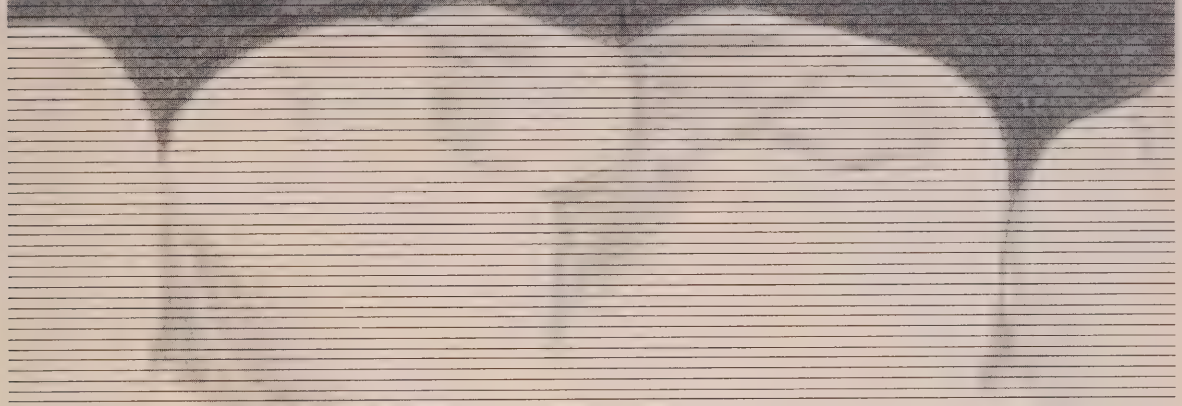

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DEVELOPING COOPERATIVE PATIENT BEHAVIOUR IN THE DENTAL SETTING

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ABSTRACT

In this review we examine a number of techniques that may be useful in overcoming patient anxiety in the dental operatory. Recent contributions of psychological research to the management of oro-facial pain are also outlined, with brief comment on the problem of patient compliance (toothbrushing) outside the dental operatory. Several of the techniques reviewed can be implemented by the dentist in a natural and economic way, while other techniques (e.g. imaginal systematic desensitization) are outside the expertise and time of the dentist.

SOMMAIRE

Cet article passe en revue diverses méthodes pour surmonter l'anxiété du patient au cours d'une chirurgie dentaire et donne un aperçu des récentes contributions de la recherche psychologique pour soulager la douleur bucco-faciale, tout en glissant quelques observations sur le problème des patients qui ne suivent pas les conseils du dentiste (brossage des dents). Plusieurs des méthodes mentionnées sont simples et économiques à appliquer, tandis que d'autres (par exemple, la désensibilisation méthodique de l'imagination) ne relèvent pas de la compétence du dentiste qui ne pourrait d'ailleurs y consacrer le temps voulu.

DISCUSSION

In working with patients the dentist deals with many problems of a psychological nature that may impede effective dentistry. A common psychological problem is patient anxiety about dental procedures. When accompanied by such negative reactions as squirming, kicking, biting, etc., dental examination and treatment may become impossible. To a certain extent patient anxiety and non-cooperativeness is justified since dentistry involves many aversive procedures. However, when such reactions interfere with dental routines some form of anxiety reduction is warranted. Another problem area in which psychological factors play a role are the oro-facial pain disorders, e.g. bruxism and temporomandibular joint dysfunction (TMJ). Patients suffering from these pain-related dental problems are often anxious or depressed, and recalcitrant to dental procedures.[1,2] Consequently, behavioural problems associated with oro-facial pain disorders must be addressed for long term pain relief and dental treatment adherence. A further problem faced by the dentist is the lack of patient compliance outside the dental office with respect to toothbrushing and dietary precautions. Despite the pain and discomfort that patients undergo in dental treatment, people often do little to help prevent tooth decay by following the advice of their dentist. Thus means of developing patient compliance outside the dental office is a vital issue to preventive dentistry.

In an excellent critique on the management of the dental patient, Melamed and Siegel[3] have observed that most dentists and allied health personnel practice psychology to some extent in dealing with the behavioural problems encountered in their patients. Unfortunately, these practices although well intentioned, are not always consistent with what psychological research has revealed about the learning process. The classic example would be the way in which trinkets, balloons, etc., are given to children as a reward at the end of an appointment. Presumably the aim of the exercise is to develop cooperative behaviour. Because reinforcement is most effective when it is contingent upon the desired behaviour, the dispensation of balloons at the end of the session (delayed reinforcement) is not likely to be very effective. This is not to say that the dispensation of balloons at the end of a visit is not worthwhile in terms of having the child leave on a positive note.

When standard practices such as verbal reassurance and rewards at the end of the session fail, the dentist may adopt more drastic procedures ranging from medication to a general anaesthetic. Medication may have undesirable side effects, and there is a life risk with general anaesthetic. Also, many parents and patients do not wish to have such preparations. Over the last twenty years, however, a great deal of research has been conducted in which dentists and psychologists have collaborated on the aforementioned problems for the benefit of patients.

OVERCOMING PATIENT ANXIETY ABOUT DENTAL PROCEDURES

Patient anxiety and negative reactions to dental procedures may have traumatic and/or non-traumatic origins.[4] A proportion of patients are fearful or even phobic of dental procedures because of an excessively painful experience (e.g. a difficult extraction or a careless cavity preparation) with a dentist. As a result of the association between the trauma and neutral stimuli (e.g., odour in the operatory, sound of the drill, sight of instruments), these previously neutral stimuli elicit fear and avoidance. It is probably the case, however, that most patient fears are an interaction of the transmission of information about "awful" dental procedures and the modelling of fearful behaviour displayed by significant others. In some instances, fearful dental behaviour may result in social reinforcement (over concern) which serves to strengthen the fear response. Social reinforcement of fear behaviour may begin before the dental visit. Regardless of the origin of excessive fears, there is the question of their management. A great deal of patient anxiety can be alleviated by the way in which appointments are scheduled, a good dentist-patient relationship, and the control of auditory and visual characteristics associated with the dental surgery. Further to these general considerations, there are a number of specific techniques including systematic desensitization, modelling, contingency management, and hypnosis.

Appointment Scheduling

The manner in which appointments are scheduled and organized may help prevent patient anxiety to some extent. As summarized by Melamed and Siegel[3], a number of points can be made here. If possible long periods in the waiting room should be avoided since they elevate patient anxiety.[5] In the waiting area friendly interaction with dental assistants and staff is desirable.[6] A graded approach is also recommended at this stage. In the initial visit the patient may be interviewed away from the dental operatory, and at a later stage familiarized with the equipment in the dental operatory. For example, children that can be trusted might be allowed to touch certain pieces of equipment prior to their use.

The Dentist-Patient Relationship

Obviously it is desirable that the patient develop confidence and trust in the dentist as soon as possible. A little time chatting to patients, explaining the dental problem with the assistance of diagrams, showing how the problem is to be tackled, and discussing what sensations and pain can be expected is welcomed by most patients.[7] Having realistic expectations seems to help many patients cope much better with pain. Involving patients in the progress of treatment by initiating rest periods and taking responsibility for minor tasks develops a sense of controllability within the patient.[8] This can be easily accommodated by the dentist since breaks are usually required in most dental routines.

The Dental Operatory

Most dentists would agree that the way in which the dental operatory is organized constitutes an important consideration in patient management. Streamlined equipment and quiet drills probably help allay anxiety. Unecessary instrumentation can be kept out of sight. In an experiment by Swallow and colleagues[9] with children, a portable dental unit, mobile operator, and wash basin were concealed behind screens. Keeping instruments and apparatus out of vision reduced anxiety to a significant extent compared with controls. Corah and his colleagues[10] found that relaxation and distraction during operative dental procedures to be effective with adult patients. Training in relaxation typically involves the tensing and relaxing of the major muscle groups and the use of appropriate suggestions. The relaxation condition involved taped relaxation instructions played through headphones. This condition appeared to help female patients more than male patients. The distraction condition involved a video ping-pong game in which the patient participated. This condition appeared to help male patients more than female patients.

Systematic Desensitization

For many years systematic desensitization was the technique of choice in the treatment of specific anxiety.[11] Systematic desensitization is not a technique the dentist would employ because of lack of time and training. Rather the dentist is advised to refer highly anxious patients to a clinical psychologist competent in systematic desensitization. The critical procedural ingredients are a graded approach to what elicits anxiety, and use of something to suppress anxiety (usually deep muscle relaxation). The graded approach is worked out in terms of a "hierarchy" of anxiety provoking scenes ranging from least anxiety provoking to most anxiety provoking scenes. An example of a hierarchy for the imaginal systematic desensitization of a dental phobic has been adapted from Gale and Ayer.[12]

(least anxiety provoking)

1. Thinking about going to the dentist.
2. Getting in your car to go the dentist.
3. Calling for an appointment with the dentist.
4. Sitting in the waiting room of the dentist's office.
5. Having the nurse tell you it's your turn.
6. Getting in the dentist's chair.
7. Seeing the dentist lay out his instruments, one of which is a probe.
8. Seeing the dentist lay out his instruments, one of which is pliers that are used to pull teeth.
9. Having a probe held in front of you while you look at it.
10. Having a probe placed on the side of a tooth.
11. Having tooth pulled.
12. Hearing crunching sound as your tooth is being pulled.

Initially the patient is trained in muscle relaxation which may take several sessions. Then the patient is required to relax and work through the anxiety hierarchy. This can be done in the patient's imagination or real life exposures might be arranged. Training children in muscle relaxation and imaginal systematic desensitization may prove difficult.[13] Thus an alternate means of suppressing anxiety (e.g. having parent next to child) and real-life systematic desensitization may be preferable in the case of children. Of course the dentist can do much to overcome patient anxiety by taking a graded approach to treatment and minimizing the risk of trauma.

Modelling

Modelling has been shown to be a powerful fear reduction technique, and has a great deal to offer the dentist concerned with the management of patient anxiety. This technique capitalizes upon the fact that much human learning relies upon information and imitation. In modelling, the anxious patient observes another patient (model) overcome initial apprehension about the stress situation and receive commendations and rewards for any cooperative efforts.[14] In view of the practical problems associated with employing live models, film or videotape (symbolic) demonstrations of nonfearful behaviour are preferred. Given technological advances in video equipment, various films of people successfully undergoing dental treatment could be shown in the dental office at an economic cost. Such films may currently be available from health education libraries.

Modelling will be more effective if patient and model are matched on age and sex.[15] With respect to the model, a distinction is often drawn between coping and mastery models.[16] Coping models verbalize initial apprehension and may temporarily withdraw, but eventually overcome their fear and carry out the task. Mastery models on the other hand, exhibit almost no fear or hesitation in executing the difficult task. The coping style of the model seems to promote

greater positive behaviour change in patients. Several carefully controlled research studies[17-20] suggest the salutary effects of modelling in overcoming patient anxiety in health care and dental settings. An important point, however, is that modelling does not produce uniform effects, i.e., not all patients do equally well using the same model.[3] Dentists interested in the application of modelling should consult the literature[3, 17-20] on such important considerations as the age of the patient and the timing of the films or videos in relation to the dental procedure.

Reinforcement

Traditionally, verbal persuasion and coaching have been employed by dentists as a means of gaining cooperative behaviour. However, these strategies may upset certain patients and produce aggressive behaviour in other patients. While there are times when firm commands are necessary, it should be emphasized that specific feedback and praise at the time of appropriate behaviours is the most effective means of gaining cooperative patient behaviour.[21] Here it should be realized that dentists along with other health care professionals are usually held in esteem by patients and are therefore in a position to exercise a great deal of social reinforcement.

An interesting illustration of reinforcement in the dental setting has been provided by Kohlenberg and colleagues.[22] Severely retarded persons were taught to sit back in their chairs, pay attention to the dentist, and keep their mouths open by squirting fruit juice into their mouth immediately after cooperative efforts! Reinforcement strategies are an economic and effective means of enhancing cooperative patient behaviour, and complement what is partially standard practice for many dentists.

Hypnosis

Many dentists gain specialist training in hypnosis and make use of this technique in their dental practice. Although commonly used in dentistry, many argue that hypnosis is only suitable for a few patients and is too time consuming. However, in the light of what is known today about the number of patients who can be hypnotized into light, medium, or even deep trances, it is becoming realized that hypnotic procedures offer an economical way of managing patient anxiety and uncooperativeness.[23-24] There are many methods of inducing hypnosis, although the most common would be the eye-fixation progressive method in induction. For example, the patient may stare at an object while the dentist counts down and makes suggestions of drowsiness, etc. Such standard methods of inducing hypnosis may be assisted by tape recorded instructions. Prior to hypnosis of course, the patient must agree to the technique.

The major uses of hypnosis in the dental setting include the reduction of anxiety and fear, and development of relaxation and cooperative behaviour.

In addition, hypnosis has been useful in the control of fainting, bleeding, salivation, etc.[23] Before the patient has left the surgery it is important that the patient is dehypnotized.[25] Basically, dehypnotization entails the removal of hypnotic suggestion and checking that the patient is coordinated and alert. At a theoretical level the medical and dental use of hypnosis is often nested in psychoanalysis (e.g. warnings of symptom substitution). However, hypnosis can also be employed within a behavioural framework.[26] For example, hypnosis is often used to induce a deep state of relaxation for imaginal systematic desensitization.

ORO-FACIAL PAIN DISORDERS

Oro-facial pain disorders very often do not respond to standard dental treatment, presumably because of the psychological aetiology of many of these disorders. When searching for psychological explanations of chronic patients who have not responded to standard dental treatment, it is important that the dentist does not overlook the operant or functional significance of pain behaviours. As Fordyce[27] has pointed out, chronic pain may be subject to both positive reinforcement (e.g. overconcern on the part of friends and relatives) and negative reinforcement (e.g. avoidance of work and interpersonal conflicts). The treatment implications of the operant model of chronic pain have yet to be realized in the area of oro-facial pain disorders. A treatment program based upon an operant analysis would attempt to systematically control social reinforcement, activity level, and medication.[27] Assertive and social skills training may also be necessary in order to help the patient cope with threatening interpersonal situations. Such techniques are outside the expertise of the dentist, and referral to a clinical psychologist would be appropriate should the patient require such assistance. To date researchers have focused upon relaxation training, massed practice, biofeedback, and hypnosis.

Relaxation

Training the patient in relaxation is a method of intervention that sometimes is sufficient to overcome the presenting problem. Traditionally, abbreviated progressive relaxation has been preferred in relaxation training. This particular relaxation technique involves the systematic tensing and relaxing of the major muscle groups, and physiological attention focusing (i.e. concentration on the feelings of tension and relaxation). Excellent training manuals are available to the dentist interested in pursuing abbreviated progressive relaxation.[28] It should, however, be remembered that there are many other methods of relaxation training (e.g. autogenic training, transcendental meditation) that may suit certain patients better than abbreviated progressive relaxation.[29]

Biofeedback

Biofeedback has also been applied to pain-related dental problems. In biofeedback training the patient is given auditory and/or visual feedback usually on how much tension there is in the masseter. The patient is instructed to reduce muscle tension and that success will be indicated by a change in the feedback apparatus. It is possible to systematically reduce tension levels through the alteration of criterion threshold levels of muscle tension. The dentist employing biofeedback should not expect uniform results.[31]

Massed Practice

A seemingly paradoxical strategy of breaking unconscious habits such as bruxism is massed practice, in which the patient is required to strenuously rehearse the habit. The basic rationale is to over fatigue the muscle until the bruxism cannot be carried out. One of the earliest cases of bruxism to which massed practice was applied is that of Wolpe's.[11] The patient was instructed to clench and then relax the teeth over a number of cycles through the day. Following this program, Wolpe reported complete elimination of bruxism. Since this particular case, massed practice has been applied to many individual cases with apparent success. However, controlled research investigations have not provided the same degree of support as case studies for massed practice as treatment for bruxism.[32] The dentist interested in the use of this technique should consult the literature[32] on massed practice, and make a careful clinical judgement of its use given that the patient is being asked to further engage in the problem behaviour.

Hypnosis

Hypnosis has been extensively applied to bruxism and oro-facial pain. During hypnosis the patient suffering from bruxism is given the suggestion to immediately awaken if teeth grinding commences in his or her sleep, discontinue bruxism and return to normal sleep.[25] In some patients the bedtime use of self-hypnosis can inhibit the grinding of the teeth during sleep. Gerschman and his colleagues[33] have reported data in the treatment of 200 patients suffering from oro-facial pain, 52 (20 percent) of

whom received hypnotherapy. Hypnotherapy consisted of standard induction techniques, predominately by direct suggestion using relaxation procedures. Within the hypnotic framework, these researchers used visualization techniques, dental simulation, desensitization, post hypnotic suggestion, implosion and flooding. Seventy per cent of patients have shown marked alleviation of symptoms. It will be noted that hypnosis was used in conjunction with other techniques, and there was no outcome comparison with a control group. Nevertheless, a 70 per cent significant improvement suggests that hypnosis and related procedures can be effective.

PATIENT NONCOMPLIANCE OUTSIDE THE DENTAL SETTING

Although most patients undergo pain and financial cost in having dental treatment, patients invariably do not follow-up on the advice of their dentists and observe adequate oral hygiene (toothbrushing and proper diet). As Melamed and Siegel have pointed out, having a sweet is more immediately reinforcing than thinking of the decay that may be building up. Consequently, it is argued by Melamed and Siegel[3] that these self-care behaviours must be learned as habits early in life with patients playing an initial role. Initially parents and children might have to be shown how their teeth should be brushed. Simple strategies that the dentist may employ as a means of enhancing compliance include giving the patient information on the need for toothbrushing and a reasonable diet. Warnings might be issued on the consequences of noncompliance. Pamphlets for the patient to take home are also a good suggestion since patients have difficulty recalling what their health care providers tell them. Also, the dentist can ask parents to praise their child when toothbrushing is carried out. Dentists interested in the general problem of patient noncompliance in health care settings should consult the excellent textbook by Haynes and his colleagues.[34]

CONCLUSION

A number of techniques have been outlined to help overcome the problems of patient anxiety, oro-facial disorders, and noncompliance outside the dental operatory. Several of these techniques (e.g. scheduling appointments, developing a good relationship with the patient, controlling the auditory and visual characteristics of the dental operatory) are easily implemented by the dentist. Patients who fail to respond to such strategies might be referred to a clinical psychologist or colleague trained in anxiety management, pain control, etc.

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MERCURY IN DENTAL OFFICES

SURVEY IN VANCOUVER, B.C.

R.H. Roydhouse, BDS, MS, DDSc
M.R.F. Ferg, BSc, DMD
R.P. Knox, BSc
Vancouver, B.C.

SUMMARY

A group of dentists had their offices monitored for mercury vapour and content. Low values were found compared to other surveys, but a variety of locations of a reservoir of mercury-rich materials was identified.

SOMMAIRE

Cet article fait état d'un exercice de dépistage des vapeurs et des particules de mercure dans un certain nombre de cabinets dentaires. On en a trouvé peu, par rapport à d'autres études, mais on a constaté qu'il y avait des dépôts de matières riches en mercure en divers endroits.

This survey was carried out during the summer of 1981 in Vancouver and adjacent municipalities. The dental offices surveyed responded to an invitation to have the mercury levels assessed. The experiment was reported in part at the International Conference on Mercury Hazards in Dental Practice, held in Glasgow, September 1981.[1,2]

MATERIALS AND METHODS

All ambient or vapour measurements were made with a Jerome Gold Film Mercury Vapour Analyser, Model 401, and were done during daylight hours while the dental offices were in operation. The mercury contamination of floors and walls was estimated by obtaining samples of dust from standard areas. Carpet and linoleum or tile floor samples were obtained by vacuum cleaning (with air pump) an area 5 cm × 5 cm with a trap capturing 5 micron or larger particles; the trap material and dust were immersed in iodine monochloride. Walls were wiped with a paper towel moistened with water, and the sample immersed in iodine monochloride. Aliquots from the solution of (C) were reduced with stannous chloride, the vapour discharged into a Coleman 50 meter attached to a chart recorder. From the chart the total mercury content of the aliquot was calculated using integration of the area below the line inscribed; the meter was calibrated using known concentrations and linearity was not assumed in the scale.

RESULTS

The results of mercury vapour measurements are shown in **Table I**. We have chosen to report in micrograms of mercury per cubic meter of air, or $\mu g/m^3$. The breathing ambient is measured 1-1½ m from the floor; the surface ambient is measured about 0-1 cm above the surface. The correlation coefficient for surface ambient, operator side versus assistant side was 0.48 (n = 41) and for surface ambient bench beneath amalgamator versus floor in front of amalgamator was 0.03 (n = 20).

The results of the total mercury content of carpet on floors are shown in **Table II** – this is combined mercury, not mercury vapour. The correlation coefficient of 19 paired readings of ambient and mercury content below, was 0.79, with average ambient 25 $\mu g/m^3$ (s.d. 22) and average mercury content 4.3 g/m^3 (s.d. 6.1).

Table III shows wall dust values. Such wide variation existed that the values were put in two groups. No relationship to adjacent ambient air values was found. No clear distinction was established between freshly painted or otherwise, or enamel or "flat" surfaces.

Table IV shows a variety of contamination sites about the dental suite. Not all offices have similar facilities, and wide fluctuations occur in locations at a distance from the operatory – dependent on age and length of service.[3] For example, cleaning materials and devices varied; some vacuum cleaners emitted up to 500 $\mu g/m^3$.

The above results do not take into account a variety of possibly significant variables such as air exchange due to ventilation, variation in temperature – especially outside versus inside temperature, and operation of ventilating systems.

DISCUSSION

The Jerome meter measures only mercury vapour and, unlike the other instruments using the U.V., absorption technique (e.g. Bacharach Meter) is not influenced by smoke, dust or organic chemicals such as benzene, chloroform, local anaesthetics – all of which influence the latter type of meters. We have found that the U.V. method in portable meters can have an accuracy of as low as $\pm$ 10 $\mu g/m^3$. Another advantage of the Jerome meter is that calibration can be checked at any time.

The dentists in this survey were all very interested and were keenly aware of possible hazards, and in all cases had instituted various mercury hygiene steps in their offices. The mean value for breathing ambient of 5 $\mu g/m^3$ (mercury in air) places this group in the lowest tenth percentile group,[4] i.e., 90 per cent of dentists so far recorded in other research are above 10 $\mu g/m^3$.

Table I distinguishes between breathing ambient and surface ambient. The surface ambient shows what could be called the reservoir of mercury available in the dental office. For example, although the breathing ambient in one case was 9 $\mu g/m^3$, the floor beneath was 300 $\mu g/m^3$. Some difficulties in estimation thus occur; if the observer frequently walks to and fro over the 300 $\mu g/m^3$ area on the floor, the ambient above can rise as high as 100 $\mu g/m^3$, until air movement dilutes this vapour cloud. In our experience, the high surface ambients indicate mercury spills.

Table II again shows the reservoir effect. It has been our belief that amalgam dust is a major contributor to mercury vapour levels – especially the persistence of such levels despite ventilation. That several carpets contain 25 g/m^2 of mercury content can only be described as astonishing; that is the equivalent of 50 capsules of amalgam in a 3 ft × 3 ft area, and even more significant is the distribution. The carpeted areas pick up mercury content as dust (mercury debris and dust generated by removal of old amalgams postulated) almost independent of location. The highest values 20-25 g/m^3 were in offices with linoleum or tile floors in the operatory and carpet in the clerical, reception or waiting areas. The highest surface ambient (4 $\mu g/m^3$) at the Faculty of Dentistry is in the waiting area which is carpeted. While carpets can be eliminated, one wonders where the dust will then go. Low levels for some carpets were found. The problem due to mercury-rich dust was well described by Buchwald.[5] The difference between surface ambients and general ambients should be distinguished. Carpets have been associated with higher blood levels of mercury,[3] and with higher ambients.[6] However, our research shows any carpet, not just in the operatory areas, is suspect. Suitable mercury-fixing materials for such carpets are thus an urgent priority.

The wall contamination (**Table III**) shows yet another reservoir, and miscellaneous areas, such as shown in **Table IV**, show sites of contamination. The levels inside sinks indicate drainage contamination; it is not surprising that in another experiment,[2]

TABLE I

Mercury Vapour Measurements

Values in $\mu g/m^3$, read by Jerome Meter

Location	No.	Breathing Ambient	Surface ambient	
			Operator Side of Chair	Assistant Side of Chair
Operatory	42	5	10	14
std. deviation		4	5	14
			On bench	On floor
Amalgamator area	20	5	22	65
std. deviation		4	18	90

TABLE II

Levels of combined mercury of carpet on floors (expressed as g/m^2)

Location	Beside Chair	3 m from Chair	6-9 m from Chair	All Non-operatory	Operatory but Tiled
Mean value	4.09	9.60	3.77	6.10	0.01
Number	18	6	9	15	8

TABLE III

Wall Contamination

Values in mg/m^2

	Content	s.d.	Adjacent Ambient	Number	r2
High values	55.6	1.5	5 $\mu g/m^3$	14	0.17
Low values	0.3	0.4	5 $\mu g/m^3$	11	0.57

TABLE IV

Various values for surface ambients

Location	Mean Value	Standard deviation	Number
General ambient	5	5	42
Garbage areas operatory	13	19	39
Laboratory	11	5	7
Sinks, operatory	7	4	30
laboratory	12	7	8
"Fresh" air vents in	6	4	39

methylmercury was found in dental office plumbing, and phenylmercury in the ambient air.[7] A perhaps alarming observation shows that the fresh air into the office in the ventilation system averaged 6 $\mu g/m^3$. This represents the general level in the entire building in which the dental office is located (some were in quite large buildings). By a statistical curiosity, the dentists surveyed had lower ambients in their offices than the fresh air circulation in their buildings; the difference is not significant, but the thought that their neighbours may be a high direct source of contamination is significant. For example, an orthodontist not using any amalgam may have 10 $\mu g/m^3$ or more of mercury in the air of his workplace; we have recorded such instances.

This survey agrees in its general conclusions with the CDA survey,[6] in that we identify the lowest percentile groups. We must note that essentially *every dental office* can have the levels found in our survey without much more than a change in priorities — such as shown by the results in 42 operatories in Vancouver.

The authors acknowledge the assistance of the 18 dentists involved — especially their interest and concern.

Dr. Roydhouse is a professor in the Department of Restorative Dentistry, University of British Columbia, Vancouver, B.C. Dr. Ferg and Mr. Knox worked on this project during the summer.

Reprint requests to Dr. R.H. Roydhouse, Faculty of Dentistry, University of British Columbia, 2199 Wesbrook Mall, Vancouver, B.C. V6T 1Z7.

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BOARD OF GOVERNORS
NOTICE OF MEETING

The Interim Meeting of the Board of Governors of the Canadian Dental Association will be held on March 8-9, 1985 (Friday and Saturday respectively) at the Four Seasons Hotel, Ottawa, Ontario, commencing at 9:00 a.m. on March 8.

It is brought to your attention that meetings of the Board of Governors are open to all members of the Association.

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Announcements

MARCH/MARS

March 14-16: Greater Houston Dental Meeting. Contact: JoAnne Ingles, Administrative Secretary, 7000 Fannin, 2290 Doctor's Centre, Houston Texas. 77030, 713-790-9690.

March 31–April 3: Convention '85, College of Dental Surgeons of British Columbia. Featuring a complete scientific program, exhibits, table clinics and social events. Hyatt Regency, Vancouver. Contact: The College of Dental Surgeons of British Columbia, Suite 801, 750 Jervis St., Vancouver, B.C. V6E 2A9, 604-681-5226.

APRIL/AVRIL

April 1-7: Canada's 41st annual National Health Week, sponsored by the Health League of Canada. Theme this year is "Health Challenges for Young Canadians." Contact: The Health League of Canada, 1560 Bayview Ave., Suite 304, Toronto, Ont., 416-486-6023.

April 12-14: Society of University Dental Instructors, presents Seventeenth International Conference, Queen's University, Belfast, Ireland, Dunadry Inn Hotel, Templepatrick, Co. Antrim. Contact: J.S. Leckey, SUDI, Room 312, School of Dentistry, Grosvenor Road, Belfast, BT12 68P.

April 18-21: Medic Asia, an exhibition of medical, hospital and dental equipment, Singapore. Contact: The PR Department, INTERFAMA PTE LTD., 1 Maritime Square, #12-05, World Trade Centre, Singapore 0409.

April 22-24: National Institutes of Health Consensus Development Conference on Anesthesia and Sedation in the Dental Office." Masur Auditorium Warren Grant Magnuson Clinical Centre, National Institutes of Health, Bethesda, Maryland. 20205. For more information or to register contact: Mr. Peter Murphy, Prospect Associates, Suite 401, 2115 East Jefferson St., Rockville Maryland, 20852, USA 301-468-6555.

MAY/MAI

May 2-4: Second International Congress on Dental Implantology and Biomaterials, Hotel Inter-Continental, San Diego, CAL. Information: Clifford J. Kirschner, Executive Director, The International Congress of Oral Implantologists, P.O. Box 2277, Grand Central Station, New York, New York, 10163. Telephone (201) 783-6300.

May 2-5: Alabama Implant Congress XI, Birmingham Alabama. Contact: Alabama Implant Study Group, P.O. Box 4682, Birmingham Alabama, USA 35206.

May 3-5: American Association of Dental Consultants sixth annual spring workshop, Marriott Long Wharf Hotel, Boston Massachusetts. Contact: Dr. Samuel S. Hirson, c/o Dental Service Corporation, 100 Summer St., Boston Massachusetts 02106 USA.

May 6-22: The 9th Alpha Omega Study Mission to Israel, featuring Dr. Gerald M. Kramer, Dr. Frank Celenza and Dr. Donald G. Woodside. Lectures entitled "The Current State of the Art of Periodontics in Restorative Dentistry" and "An Update of Current Orthodontic Diagnostic and Clinical Concepts." Contact: Dr. Hart J. Levin, 2006 Bathurst St., Toronto, Ont., M5P 3L1.

May 11-13: Canadian Academy of Periodontology and Ontario Society of Periodontists joint meeting. Clinicians: Drs. Herman Corn, Mick Dragoo, George Zarb; Chairman: Dr. Anthony Melcher. Contact: Dr. Ken Hershenfield, 5 Fairview Mall Dr. Suite 210, Willowdale, Ont. M2J 2Z1.

May 12-17: 24th Congress of the Australian Dental Association, Brisbane Australia. Contact: Congress Secretariat, P.O. Box 29, Parkville, Victoria, 3052.

JUNE/JUIN

June 12-16: Saskabush. Western Canada Dental Society Convention, Saskatoon, Saskatchewan. Contact: Dr. Keith Hamilton 306-374-7272.

June 16-20: The 4th International Congress of Auxology, Université de Montréal, Montréal, Quebec. Contact: Micheline Brault Dubuc, General Secretary, International Congress of Auxology, Université de Montréal, CP 6128, Succursale A, Montréal, Qué. H3C 3J7.

June 22-29: Yukon Dental Association, Summer Convention '85, Kluane National Park, Contact: Dr. John Stern, 3089 3rd Ave., Whitehorse, Yukon, Y1A 5B3.

JULY/JUILLET

July 3-5: Bermuda Dental Association 1985 Convention. Guest speakers include Dr. Ron Jordan from the University of Western Ontario. Contact: Dr. Robert Gibbons, Erin, Paget 6-20, Bermuda, 809-296-4477.

SEPTEMBER/SEPTEMBRE

September 12-14: 37th Annual New Orleans Dental Conference, New Orleans Hilton and Towers, New Orleans Louisiana. Conference theme is "The Magic of Fine Dentistry." Contact: The Conference Office, 3101 West Esplanade Avenue, Suite 119, Metairie, LA. 7001, 504-834-6449 for information.

September 27-29: Canadian Academy of Endodontics annual meeting, Ottawa Ontario, Four Seasons Hotel, Contact: Dr. Lorne Chapnick, 2200 Yonge St., Suite 1009, Toronto, Ont. M4S 2C6.

September 29–October 2: Canadian Dental Association national convention, Ottawa, Ontario, at Canada's Capital Congress Centre, contact: CDA, 1815 Alta Vista Dr., Ottawa, Ont. K1G 3Y6.

OCTOBER/OCTOBRE

October 30: The first national and international scientific encounter of the dental schools, during the XVIII National and International Congress of the Mexican Dental Association. Contact: Admgen Ezequiel, Montes 92, Mexico, D.F., 06030 Mexico 915-566-61-33.

NOVEMBER/NOVEMBRE

November 2-5: 126th Annual Session of the American Dental Association, San Francisco California. Contact: The American ental Association, 211 East Chicago Ave., Chicago Ill., USA 60611 USA.

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PRESCRIBING INFORMATION:
ROVAMYCINE® (spiramycin)

INDICATIONS AND CLINICAL USES
The treatment of infections of the respiratory tract, **buccal cavity,** skin and soft tissues due to susceptible organisms. Neisseria gonorrhoeae: as an alternate choice of treatment for gonorrhea in patients allergic to the penicillins. Before treatment of gonorrhea, the possibility of concomitant infection due to T. pallidum should be excluded.

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Rovamycine is contraindicated in patients with known hypersensitivity to the drug. The levels of spiramycin attained in the cerebrospinal fluid are much lower than those in the blood and are too low to be clinically useful. Therefore Rovamycine must not be used in patients with meningitis.

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Administer antibiotics, including Rovamycine cautiously to any patient who has demonstrated some form of allergy, particularly to drugs. The possibility of superinfection caused by overgrowth of nonsusceptible organism should be kept in mind during prolonged or repeated therapy. If superinfection occurs, discontinue the drug and take appropriate measures. Safety of this product for use during pregnancy has not been established.

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SYMPTOMS: No case of accidental overdosage has been reported. In oral doses over 4 g per day, abdominal discomfort, nausea or diarrhea may occur.

TREATMENT: No specific treatment has been proposed. Management should be symptomatic.

DOSAGE AND ADMINISTRATION
Adults: 6,000,000 to 9,000,000 I.U. (4 to 6 capsules of Rovamycine '500') per 24 hours, in 2 divided doses. In severe infections, the daily dosage may be increased to 12,000,000 to 15,000,000 I.U. (8 or 10 capsules of Rovamycine '500' per day). Gonorrhea: 12,000,000 to 13,500,000 I.U. (8 to 9 capsules) in a single dose.

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March/mars 1985 Vol. 51 No. 3

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Canadian Dental Association

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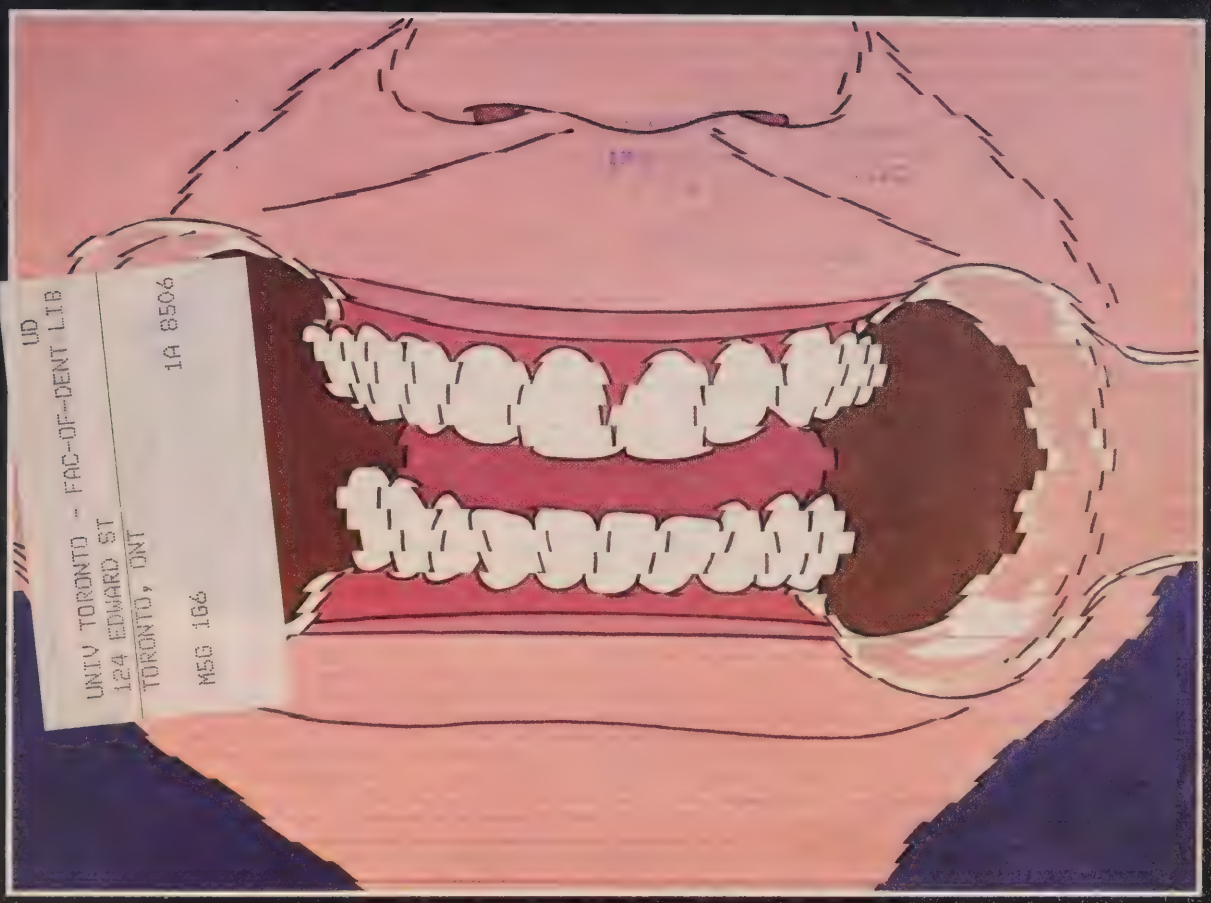

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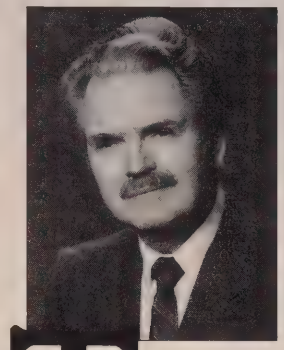
DENTAL HEALTH MONTH: GET IN THE SPIRIT



Editor's Note: *The Editorial page of the Journal this month has been turned over to CDA's President, Dr. Ralph Crawford, who offers his thoughts on National Dental Health Month and CDA's Dental Awareness Program. The launch of the Dental Awareness Program, will coincide with April 1985, traditionally National Dental Health Month. The President's message on this landmark CDA program should be of extreme interest to Journal readers and is important enough to the Editor, to devote the Editorial page of this issue to it.*

The vernal equinox on March 21st marks the beginning of spring and brings with it the rites of spring. One of these – the one closest to my heart as a dentist – is National Dental Health Month. April is traditionally dedicated by the profession to the promotion of dental health right across Canada.

Like all of society's rituals, National Dental Health Month is meant to encode certain important principles and to invite rededication to those principles now and in years to come. National Dental Health Month 85 provides CDA and all its members with an unprecedented opportunity to invest the idea and the practice of dental health with new meaning and fresh motivating power for all those Canadians we are here to serve.

CDA's plans for this April involve the introduction of some new major elements to the national program. By this point, I trust you have received the most recent Communique. If so, then you already know that April will mark the public launch of the Dental Awareness Program. This ambitious two-year effort will work to position CDA in a high profile leadership role in dental health promotion across Canada. The launch theme is, as you know, "Dental Health – Good for Life". In addition to a preview of April's activities, you have been provided with communication tools to help you make your office an integral and visible part of the program.

At the very heart of the CDA's new public education program lies the old and well-established goal of the dental profession: to effect the prevention and control of dental disease in Canada. Dental health is most definitely good for life. Getting that message across to the Canadian public is the *raison d'être* for the Dental Awareness Program. As people develop a better and broader understanding of their dental health they will also gain a deeper appreciation for the vital service the dental profession has to offer.

On behalf of the CDA Board and staff and on behalf of all the provincial associations taking part, I invite and encourage you to get in the spirit of National Dental Health Month this year. You'll help make dental health not just good for life but good for your practice as well. Let's each do our part to renew an interest and a concern in that aspect of life that concerns us as professionals and our patients as human beings. After all, that's what this particular spring ritual is all about.

THE DENTAL AWARENESS PROGRAM PROUDLY PRESENTS NATIONAL DENTAL HEALTH MONTH 1985

The Dental Awareness Program begins April 1

National Dental Health Month marks the public launch of the Dental Awareness Program, the beginning of the CDA's two-year commitment to promote dental health in Canada. Here is a timely reminder of the information you'll need to get the most out of National Dental Health Month for your office:

Theme: DENTAL HEALTH – GOOD FOR LIFE

DENTAL HEALTH – GOOD FOR LIFE presents dental health in a contemporary and universally appealing light. At the same time, GOOD FOR LIFE contains some important messages about dental health:

- It counters the established expectation that tooth loss is an inevitable consequence of aging. The message here is one of permanence – of maintaining healthy teeth throughout life.
- GOOD FOR LIFE encourages a long-term view of dental health practices – they should be sustained for a lifetime.
- The GOOD FOR LIFE theme forges a link between dental health and overall well-being. In effect, that helps raise the stature of dental health among Canadians' priorities.

Delivered through lively, colourful and cheerful graphics, GOOD FOR LIFE has been designed to have strong visual impact and to help create a positive, dynamic climate for National Dental Health Month activities.

ILLUSTRATION: THE POSTER

Caption: Posters, buttons and stickers provide strong visual impact for GOOD FOR LIFE.

HOW YOU CAN PARTICIPATE

NDHM 85 provides a number of opportunities for the personal involvement of CDA members and their dental teams:

Show your commitment: Put up the poster delivered to you in the Communique. It visibly links your office to National Dental Health Month in the eyes of your April patients. Run the patient quiz, too. It will get your patients more interested in their own level of dental health, and how *you* can help.

Spread the word: The GOOD FOR LIFE theme and the messages it conveys are natural subjects for discussion with patients and other members of the public. They provide an excellent context for discussing a variety of dental health matters.

Lend a hand: Provincial associations and their component societies have a variety of programs that might benefit from your personal support. If you have some time to give, why not check into how and when you might be able to help.

GOOD FOR LIFE POSTERS AND STICKERS ARE STILL AVAILABLE.

Should you need posters and/or stickers for use in your office, contact your provincial association for information on availability, pricing and delivery. If they are out of stock, you can also contact CDA. We will do our best to process your order in 24 hours.

For CDA orders, call collect:

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DR. PAUL O'BRIEN IS NEW PRESIDENT, NEWFOUNDLAND DENTAL ASSOCIATION

Dr. Paul O'Brien of St. John's became President of the Newfoundland Dental Association at the Association's annual meeting at the Glynmill Inn, Corner Brook.

Dr. Toby Gushue, Executive Secretary of the NDA said the session was the best attended for some time, indicating a new interest in the Association's activities, on the part of members.

Guest speaker at the convention was Dr. Ralph Crawford, President of the Canadian Dental Association, who spoke about the dental awareness program being introduced by the CDA.

Also discussed at the sessions were the new dental act proclaimed in Newfoundland last July, which has resulted in a need for changes in some of the NDA's by-laws and the dental manpower problem.

Scenes at the Newfoundland Dental Association convention

(These photos, courtesy of the Corner Brook Humber Log)

Dr. Ralph Crawford, centre, President of the Canadian Dental Association, was guest speaker at the Newfoundland Dental Association president's dinner and dance, during the annual meeting. With Dr. Crawford are, left, Dr. Dan Greene, Immediate Past-President, NDA, and Dr. Toby Gushue, NDA's Executive Secretary.

Dr. Ray Winsor receives a Certificate of Merit from Past-President Dr. Dan Greene, right.

The new executive members of the Newfoundland Dental Association posed following their installations. They are, from left, seated: Dr. Dan Greene, of Placentia, Immediate Past President; Dr. Paul O'Brien of St. John's, President; and Dr. Toby Gushue, St. John's, Executive Secretary. Standing are Dr. Ed Williams of St. John's (left), Treasurer and Dr. Gordon Anthony of St. John's, CDA Governor from Newfoundland.

Dr. John King receives Certificate of Merit from Past-President Dr. Dan Greene, right

Dr. Miller noted that refinement in grafting materials now allows tissues to be reconstructed to provide greatly improved support for, and retention of, full dentures in people who have difficulty wearing them. He also discussed application of hollow-core titanium implants in the construction of bridgework, to replace missing teeth. He believed there must be a team approach by the oral surgeon and the general practitioner to assure that the patient is provided the highest possibility of success from these new techniques.

Dentists honored

Two member dentists of the NDA, Dr. Ray Winsor and Dr. John King, were presented with Certificates of Merit in appreciation of their years of dedicated service to the Newfoundland Association.

Dr. James Miller, an oral surgeon affiliated with the Grace General Hospital, St. John's, presented a table clinic on recent advances in ridge augmentation of toothless jaws and metallic implants.

Continuing Education

Another feature of the convention was a continuing education program on the use of drugs in dental practice, conducted by Dr. Howard Katz, a clinician with the Faculty of Dentistry, McGill University, Montreal.

NEW TREATMENT FOR DRY MOUTH SUFFERERS

Recent research conducted at the National Institute of Dental Research (NIDR) has shown promising results for the relief of xerostomia (dry mouth) caused by malfunctioning salivary glands.

In tests using pilocarpine, a drug now used in prescription eyedrops, Drs. Bruce Baum and Philip Fox found that normal saliva production was stimulated by administration of the drug.

In a study conducted by Drs. Baum and Fox, the drug was given orally to a controlled group of patients with malfunctioning salivary glands. Given orally, the drug is slowly absorbed into the body and works to induce saliva production by stimulating receptors on the surfaces of salivary gland cells. Results from the double-blind, cross-over study indicate that not only does pilocarpine stimulate saliva production but patients also reported relief of subjective dryness. Use of the drug, according to study results, caused no changes in heart rate or

blood pressure and serum electrolytes remained stable.

The study used 5 miligrams of pilocarpine, which stimulated saliva production for about three hours. The researchers are planning to have pilocarpine prepared in a time-release form to provide a longer pharmacologic stimulus for saliva production.

Xerostomia is currently coming under increasing scrutiny by health care professionals and dental researchers as the disorder appears to be increasing in frequency. The condition is commonly associated with alterations in salivary gland function – either through a diminution of saliva flow or through changes in the composition of saliva. However, a non-salivary gland origin such as neurological, sensory or cognitive disorder is quite possible.

Xerostomia can be caused by any number of things, including cancer radiation therapy or is listed as a side effect of many commonly used drugs such as various types of antihypertensives and tranquilizers.

The study of pilocarpine is currently going into its second phase and dentists wishing to have a patient included in the study can write to Dr. Bruce Baum, NIDR Clinical Director, Bldg, 10, Rm, 1S217A, 9000 Rockville Pike, Bethesda, Maryland, USA 20205, or telephone: 301-496-1363.

CMA WELCOMES LIMITED LEGALIZATION OF HEROIN

In a prepared press release issued late last year, the Canadian Medical Association endorsed the limited legalization of heroin for the relief of pain. The release stated:

The Canadian Medical Association (CMA) welcomes the limited legalization of heroin for the relief of pain. The medical association joined those seeking the unrestricted medical use of heroin at its 1984 annual meeting.

Commenting on the announcement by Federal Health Minister Jake Epp that heroin would be made available for "the treatment of patients with severe pain," Dr. Alex McPherson, CMA President, said "the government's action is an appropriate, humane compromise between medical needs and the necessary control to avoid illegal street use and resulting addiction. It means that a large portion of those patients who might benefit from heroin, especially advanced cancer patients, will now have access to the drug."

Dr. McPherson warned "heroin is not a panacea, the ultimate or ideal drug to relieve severe pain. It will not completely replace morphine or the other drugs currently used for that purpose. However, there was no valid medical reason for banning heroin in 1954 and the medical profession believes it should be available for those patients for whom it provides a benefit."

Dr. McPherson paid tribute to those who have stimulated a major review of heroin as a drug, and its legal status, including: Dr. Kenneth Walker, a physician who writes a syndicated newspaper column under the pseudonym of Dr. Gifford-Jones, the late Walter Baker, former MP for Nepean-Carleton and James McGrath, MP St. John's East, who have presented private member's bills to the House of Commons on this subject.

Details of RCDC Symposium

Most of the details of the annual Convention of the Canadian Dental Association, which will be held in Ottawa, September 29 – October 2 and concurrent events, are now in place. One of the major concurrent events is the RCDC Symposium.

The Royal College of Dentists of Canada (RCDC) has chosen the general topic of "Facial Pain" for its biennial Symposium, which will be held this year on Monday, September 30, in conjunction with the CDA Convention scientific sessions, in the Ottawa Congress Centre.

The chairman of the symposium proceedings will be Dr. Kenneth C. Bentley, Dean of the Faculty of Dentistry, McGill University, Montreal.

The morning session will introduce the topic of Facial Pain by giving an overview of the current concepts of pain interpretation, followed by a description of the most recent work on deafferentation.

The afternoon session will be related to the management of the patient with chronic facial pain, followed by a panel "wrap up" and responses to questions from the floor.

Dr. Bentley will himself chair the morning session, and, in the afternoon, the chairman will be Dr. Ralph I. Brooke, Dean of the Faculty of Dentistry at the University of Western Ontario, London, Ont.

The four clinicians will be:

Dr. Ron Melzack, psychologist, McGill University;

Dr. Barrie J. Sessle, neurophysiologist, University of Toronto;

Ottawa's famous Château Laurier Hotel

Dr. Ron Remick, psychiatrist, Vancouver, and,
Dr. John Loeser, neurological surgeon, University of Washington, Seattle.

The social program

The Convention's social activities will be staged in the new Congress Centre, the stately Chateau Laurier Hotel, the luxurious new Westin Hotel and the colorful Palais des Congrès in Hull, Quebec, across the Ottawa River from the nation's capital.

Many outstanding social events have been organized by the social program co-chairpersons, Dr. Bruce Robinson and his wife, Dorothy.

The Sunday evening entertainment show on September 29, "Canada on Parade", will feature all our Canadian provinces, both in culinary delights and heart-throbbing music. On Monday evening, September 30, the attraction will be the always-memorable "President's Ball" with music provided by Ottawa's foremost orchestra and delightful dinner music.

On Tuesday evening, October 1, CDA '85 presents the "Bytown Bash" (alias "The Raftsmens' Soirée") – in what promises to be a superb evening of Ottawa Valley entertainment, featuring The Family Brown, Canada's foremost country and western music group. The "Bash" will feature a four-hour continuous buffet, lumberjack competitions (East vs West), beautiful music and lots of laughs.

The ladies' program also promises some outstanding attractions.

A daily morning exercise program has been planned (men are included), a hospitality suite will be available and a luncheon and fashion show will be staged at Canada's world-famous, National Arts Centre.

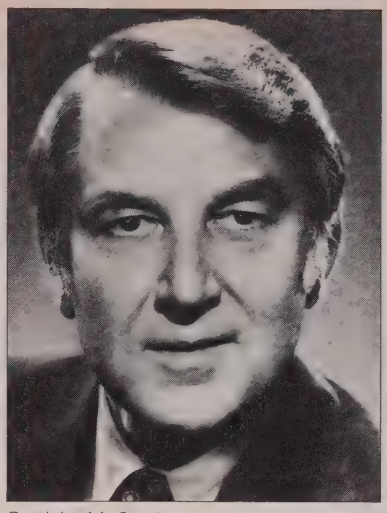
In addition there will be a house, garden and embassy tour, a one-day tour through some of the beautiful area towns and shops of the Ottawa Valley, tours of the City of Ottawa and the Parliament Buildings and a scenic countryside excursion to view the beautiful autumn colors in and around the National Capital Region. Spouses may attend all of the evening social programs as well.

The Robinsons are fully convinced that Ottawa is "A Capital Place to Meet" from September 29 to October 2.

Enquiries

Anyone – dentist, auxiliary, assistant or prospective exhibitor, who has a question about the upcoming CDA Convention '85, should address enquiries to:

The Canadian Dental Association,
1815 Alta Vista Drive,
Ottawa, Ontario K1G 3Y6
or Telephone (613) 523-1770.



Dr. John M. Coady

EXECUTIVE DIRECTOR OF ADA RETIRES POSITION JULY 1

John M. Coady, DDS, executive director of the American Dental Association, will retire as of July 1, the ADA headquarters reported recently.

Top administrative officer of the 140,000 member association since 1979, Dr. Coady's retirement marks the end of 22 years of employment with the ADA. He joined the organization in 1963 as the assistant executive director for education and hospitals.

"John Coady's contributions to organized dentistry have influenced the success of both the ADA and the profession itself," said Dr. John L. Bomba, ADA President. "During his tenure as executive director, he has worked to strengthen the ties between the many branches of the dental community and to reaffirm dentistry's position as a leader in the health care field. The entire dental family has benefitted from his dedication and commitment to the goals of the profession."

Washington headquarters

Among Dr. Coady's accomplishments as executive director of the 125-year-old national organization are the 1984 purchase of an ADA office building in Washington, D.C. and the establishment of the association's for-profit subsidiary, American Dental Office Systems Inc.

Referring to the Washington achievements, Dr. Bomba noted: "Dr. Coady has encouraged and supported our legislative and lobbying efforts, recognizing the importance of the decisions made at the national level to the provision of dental health care."

Commenting on the for-profit subsidiary of the ADA, Dr. Bomba said, "the establishment of the for-profit subsidiary is a strong component of his success in generating a significant increase in non-dues revenue for the ADA. In a time of escalating inflation, John has managed, through internal reorganization and astute management of the Association's staff and resources, to increase non-dues revenue and keep dues increases to a minimum." Since Dr. Coady was named executive director, the ADA has implemented only one increase in national dues.

As assistant executive director for education and hospitals, Dr. Coady was instrumental in the establishment of the Commission on Dental Accreditation, the national accrediting body in the United States for dental schools and training programs for dental hygienists, dental assistants and dental lab technicians.

A 1953 graduate of the Loyola University School of Dentistry, Dr. Coady served as assistant professor at his alma mater from 1953 until the time he joined the ADA staff. In 1982, he received the Loyola University School of Dentistry Annual Dental Alumni Award.

A search committee has been set up to name a successor to Dr. Coady.

DENTIST-JOGGERS BECOME ORGANIZED

Many dentists have taken up the sport of jogging as the number of runners turning up at provincial or national dental association fun runs, will attest. Dr. Roger Ellis of the Faculty of Dentistry, University of Alberta, has taken this interest a step beyond by organizing dentists and/or dental auxiliaries into a relay team, appropriately called the "Molar Milers."

For the past three years, a Molar Milers team, with Dr. Roger Ellis as captain, has entered the annual Jasper-Banff Rocky Mountain Invitational Road Race. This race is a 17 stage (17 members) 180.3 mile relay from Jasper, Alberta, to Banff, Alberta, and has become one of the most unique events on the Canadian running calendar.

The Molar Milers team finished 62nd (out of 110) in 1984. The average time per member was seven minutes, 18 seconds, per mile, with all members of the 1984 team under eight minutes and several closer to six minutes, 30 seconds. Considering the terrain of the course, with many stages uphill for miles at a stretch, this accomplishment is very commendable.

Last year, 292 teams applied for the opportunity to run along the scenic Icefields Parkway as part of the 110 teams eventually chosen. Teams from Japan, Bermuda, the United States and most provinces in Canada, participated in this relay race which each year has seen keener competition. For

example, the winning team averaged close to five minutes (Toronto Olympic Club) per mile, which to Alberta runners, most familiar with the course, is mind-boggling. For the 1984 Molar Milers to place 62nd under such conditions is indeed a tremendous accomplishment and a feat for which the dental profession can feel proud of those who were members of that team.

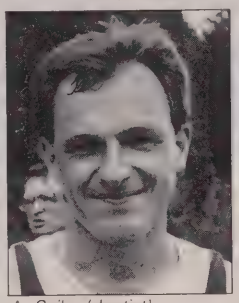
As an encore, the Molar Milers entered a team in the Klondike Trail of '98 Road Relay, September 14-15, 1984. Ten members participated in the running from Skagway, Alaska, to Whitehorse in the Yukon, finishing eighth overall and third in the mixed category (minimum of three members being female), with an average time of seven minutes, 22 seconds per mile.

The dentists and auxiliary members of the team considered the adventure and camaraderie of the event well worth travelling such a long distance to participate.

Editor's Note: Information on both of these runs for those dentists or dental auxiliaries involved in jogging programs, can be obtained by writing to: Dr. R.L. Ellis, Department of Dental Health Care, 1043 Dental/Pharmacy Building, University of Alberta, Edmonton, Alta. T6G 2N8.

In this composite of the "Molar Milers" relay team, the members are:

G. Baron (dentist)


A. Sailer (dentist)

R. Mazurat (dentist)

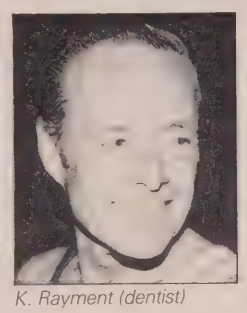
B. Richen (dentist)

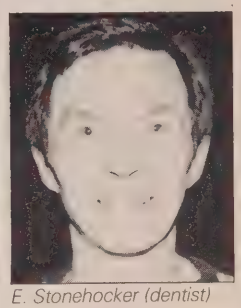
C. Sabey (dentist)

G. Roznick (periodontist)

J. Redd (dentist)

S. Deby (dental assistant)


K. Rayment (dentist)


E. Stonehocker (dentist)

G. Harle (orthodontist)

R. Ellis (dentist)

D. Schultz (dentist)

G. Sandoval (dentist's daughter)

W. Preshing (dental student)

V. Hover (dentist)

K. Kindley (dentist)

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on January 31, 1985.

Common Stock Fund	$87.47820
Fixed Income Fund	$43.53695
Money Market Fund	$30.72147
Balanced Fund	$17.30584

Total assets (market value) of the plan were $42,173,108.

The previous month's figures, as of December 31, 1984, stood as follows:

Common Stock Fund	$81.09177
Fixed Income Fund	$42.84646
Money Market Fund	$30.53434
Balanced Fund	$26.75006

Total assets (market value) of the plan were $40,620,421.

For further information write to: Canadian Dental Service Plans Inc., Ste. 600, 2 Lansing Square, Willowdale, Ontario M2J 4Z3 or call the central information services of CDSPI at 1-800-268-5418 (toll free number for Western Canada, Atlantic Canada and Ontario for Code 807 only, 1-800-268-3411 (toll free number for Quebec and Ontario except Code 807), and 497-7117 (Metro Toronto area).

FÉDÉRATION DENTAIRE INTERNATIONALE MEMBERSHIP

Membership in the Fédération Dentaire Internationale for 1985 is now open for new or renewed membership. Supporting membership from Canada and attendance at the Helsinki Congress was significant and it is hoped that such support will continue. After the March 1985 issue, only those who renew their membership will continue to receive the Newsletter and in addition, it is necessary to be a supporting member to attend the outstanding Congress planned for Belgrade, Yugoslavia on September 21-27, 1985.

Registrants to FDI world congresses must be supporting members of the Federation. To be eligible for supporting membership, Canadian dentists must be members of the Canadian Dental Association.

The subscription fee is $35 (Canadian) or in combination with a subscription to the International Dental Journal $60 (Canadian). We urge you not only to become a member but to encourage your colleagues to join as well.

Your membership fee is your contribution in support of FDI in its efforts to promote improved dental health on a worldwide basis in direct exchange of scientific knowledge and expertise. A portion of the fee will also be used by the CDA to offset administrative expenses associated with the FDI membership program.

Please return the attached form with your remittance without delay to the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6.

CANADIAN DENTAL ASSOCIATION

1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6

MEMBERSHIP APPLICATION FÉDÉRATION DENTAIRE INTERNATIONALE

— To develop contacts with dentists from around the world

— To be part of your profession's voice in the international community

— Fees include administration cost, U.S. premiums, CDA representation to FDI

_____ $35 FDI Supporting Membership will receive the Quarterly FDI Newsletter and Membership Card

_____ $60 FDI Supporting Membership and Subscription to International Dental Journal

NAME _____ ADDRESS _____

THIS IS NOT A LICENCE FEE, this is your remittance for annual supporting membership.

Please return this form with your remittance payable to CDA. A receipt and membership card will be issued.

Briefly

The Hospital for Sick Children Foundation is providing funding for the first in depth study of childrens' dental health in Newfoundland and Labrador.

It has been reported that the two-year study will cost $26,487 and is being conducted under the direction of Dr. Sharat B. Doshi, Director of the Division of Community Dentistry, Department of Health and Dr. George Foder, Professor of Epidemiology and Associate Dean of Community Medicine, Memorial University.

The dental health of about 500 children in rural Newfoundland will be studied. Two age groups will be involved: children aged six and seven and those aged 13 and 14.

An Atlantic area study was conducted in 1982 when the dental health of about 350 children in larger communities in Newfoundland were involved. Dr. Doshi said the results of that study are still to be published, but when reports of both studies are available, they should provide a complete picture of the dental health of children on the Island.

Dr. Doshi feels the results may generate an atmosphere for new approaches in the provincial dental health programs. Rather than have an emphasis on how to cure dental diseases, the importance of prevention will be stressed in the future, he said.

Dr. George Zwicker, President of the Nova Scotia Dental Association, recently scolded parents for their attitude toward good dental health for their children. His comments, published in a Halifax newspaper, noted that about 40 per cent of children eligible for dentist's care under MSI provisions in that Province, have not gone to a dentist at all. He doesn't blame the situation on the youngsters or financial straits in their homes, but on parents "who do not care and who, probably, are among the 50 per cent of the Nova Scotia public who never go to a dentist."

He pointed out that poor dental health can lead to medical problems and said that "it is evident that some of the current demands on hospital services and upon the MSI purse, are a consequence of neglect of the teeth." Such problems, he believes, are 'self-inflicted." Whatever can be done to encourage the public to take better care of its teeth would be effort well spent, Dr. Zwicker concluded.

A new dental publication may soon make its debut in Nova Scotia. *The Nova Scotia Dentist*, a new communications tool for the Nova Scotia Dental Association, is a magazine to be published every two months. Volume One, Number One, may be circulating among the membership of the NSDA by late spring. It will contain professional information, about eight pages of editorial material, a president's column and dental meeting notices.

The project has been thoroughly researched by the NSDA, prior to approval, and the Association there will be a strong enough advertising base to support the venture.

The Atlantic Provinces Dental Convention for 1985 is being held May 19-21. This year's location is Halifax Nova Scotia.

The Convention is being held this year in conjunction with Dalhousie University's Post-College Assembly. Convention chairman is Dr. Don Cunningham, who may be contacted through the Faculty of Dentistry, Dalhousie University, 5981 University Ave., Halifax N.S. B3H 3J5.

An extortion scheme is being directed toward professionals, such as dentists, in Canada, using the name of the Paper Mate company as a way to extort money.

According to a recent report, a dentist, medical doctor or some other member of a professional group receives a telephone call from someone in California who says he or she is calling from Paper Mate with an offer of a special prize if the professional orders 100 Paper Mate pens at a "special rate", by credit card.

If the respondent gives his or her consent – along with his or her credit card number and expiry date – a package of pens indeed arrives, debited in U.S. funds amounting to $249 (approximately $330, Canadian). The same pens can apparently be bought in Canada for about one-third of the price.

The scheme is being tried on professionals in the Toronto area, including dental practitioners. Spokesmen for Paper Mate Canada have indicated that the Company knows nothing about nor has anything to do with the scheme.

"The best we can do is try to alert people in Canada that an attempt may be made to extract money from them under the false umbrella of a widely known corporate name," said Howard Silverstone, Vice President and General Manager of Paper Mate.

Two more "Call the President Days" have been scheduled.

CDA President, Dr. Ralph Crawford, will be available to hear the concerns of the dentists of Canada on both April 17, 1985 and June 4, 1985. On both of these Tuesdays, concerns can be expressed to Dr. Crawford from 8:30 to 4:30 Eastern Standard Time, at 613-523-1770.

After long and careful deliberation, the New Brunswick Dental Association has framed a new Dental Act, and the membership has expressed its satisfaction with it. The next step is to present it to the province's Legislative Assembly when that body resumes sittings. However, when this report was filed, (late in January) the political scene in New Brunswick was a bit cloudy because of Premier Richard Hatfield's personal entanglement with the law and hearings on the matter of making French an official language in the Province, were still under way.

The Federation Dentaire Internationale recently had published, by Quintessence Publishing Company Ltd., a book that could be of interest to Journal readers.

The publication, entitled "Social Sciences and Dentistry, Volume II, a Critical Bibliography," is edited by L.K. Cohen and P.S. Bryant. It was sponsored by the FDI Commission on Dental Education and Practice and provides the reader with reviews of the social and behavioural science literature from 1971 to 1982, by various authors from various countries.

The price to FDI supporting members is $37.50.

For more information, contact Federation Dentaire Internationale, Headquarters Office, 64 Wimpole St., London, W1M 8AL U.K. or the Quintessence Publishing Company Ltd., 36 Canbury Park Road, Kingston-upon-Thames, Surrey, KT2 6JX, U.K.

Dr. Laird Jennings of Dundas, Ont., recently came to the rescue of Ilsa, an eight-month-old, 65-pound German shepherd member of the household of Pat Field, a valued patient.

The dog had been carrying a rock in her mouth, and when has master called, she had raced through the doorway, striking the door frame with the rock. The blow broke off a large front tooth. The local veterinarian, Dr. Bruce N. Robinson, noted this was critical because it was a "tearing" tooth, not a chewing one. He also told Mr. Field that pulling the tooth of a dog before the animal is a year old can result in a deformed jaw.

Dr. Laird Jennings came to the rescue. He gave the dog a sedative to calm her but found it difficult to make the dog lie quietly. On the first occasion, Dr. Jennings just capped the tooth and two weeks later, he administered some sodium pentathol. The dentist drilled out all of the pulp of the tooth to the depth of about one-half inch, plugged the cavity with silver and capped it. Because he was treating such large teeth, he used bits and a hand drill that he had never used before. The veterinarian and dentist performed the surgery, while a dental assistant and Ilsa's owner held the dog, to make sure she didn't bite down on the drill.

Dr. Jennings said it was a first for him, and Dr. Robinson was not aware of a precedent either.

Mr. Field is pleased with Ilsa's condition. "She's recovering well."

The Johnson and Johnson Preventive Dentistry Awards are next going to be presented at the Federation Dentaire Internationale 74th Annual World Dental Congress in Manilla, Philippines in November 1986.

However, entries must be received no later than September 1, 1985. The categories are Community Programmes, Professional Education, and Research. Winners in each category will receive a prize of US $2,000.

The award is open to all health workers, including dental and auxiliary students, with experience in the chosen category.

The rules for submissions are: All entries must be submitted for only one category and must not duplicate an applicant's previous entry. Only typed or printed entries will be accepted. Entries consisting of films, slides, motion pictures, drawings, models, illustrations or involving a radio or television programme must include a typed outline and/or transcript of the project. All entries must have a one-page outline on the content of the entry, which must list: the purpose of the entry, the techniques used to carry out the project, the results obtained or an explanation on how the results may be measured. Entries submitted in a language other than English must include an outline in English and the legends to any other parts of the entry should be duplicated in English. Research reviews and "past records" of individual candidates will not be considered.

Send entries by September 1, 1985 to: The Executive Director, FDI Headquarters Office, 64 Wimpole St., London W1M 8AL UK.

MILESTONES

Thora Appelt Retires from CDA

CDA's Co-ordinator of Accreditation, Mrs. Thora Appelt, retired from the Association at the end of February.

Since joining the Association in March 1977, Mrs. Appelt has been responsible for the co-ordination and scheduling of accreditation surveys of institutional dental services and educational programs for dentists and dental auxiliaries across Canada. In addition, Mrs. Appelt served as Secretary to both the Council on Hospital and Institutional Services and the Council of Education and Accreditation.

Mrs. Appelt's good humour coupled with her organizational ability and communications skills helped her make a valuable contribution to CDA.

She will be missed by members of both Councils, numerous Deans of Canada's dental faculties, innumerable CDA members who have co-operated in accreditation surveys, three directors of Accreditation, as well as by her other collegues, co-workers and friends.

Linda Teteruck Honoured

Linda Teteruck, CDA's Director of Educational Services was honoured by Executive Council recently for her 10 years of service to the Association.

An employee of the Association since 1975, Miss Teteruck originally began her career in the Toronto offices. She started out as Secretary, Office of Student Affairs and over the years has had the increased responsibility of co-ordinating the Dental Aptitude Test Program, student membership activities and all of the activities associated with CDA's annual convention. In addition, she has served as staff resource to CDA's Councils on Student Affairs, Information Services and Product Acceptance.

Miss Teteruck, in her current capacity is responsible for such high profile activities as the Dental Awareness Program.

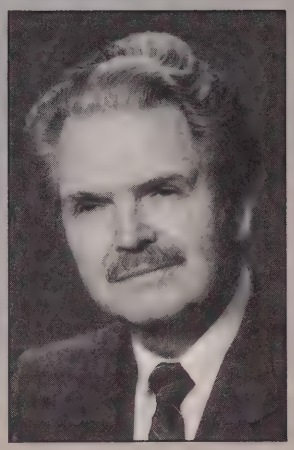
Miss Teteruck has a Master of Arts degree from the University of Western Ontario.

CDA'S PRESIDENT WANTS TO TALK TO *YOU*!

Dr. Ralph Crawford, CDA's President, is holding a Call the President Day April 17, 1985. From 8:30 am until 4:30 pm, Canadian dentists can express their concerns to Dr. Crawford by calling CDA headquarters, 613-523-1770. Do you have questions, comments or concerns on topics of interest to all Canadian dentists? Are you wondering just what the Canadian Dental Association can do for you? If so, call Dr. Ralph Crawford, April 17. He invites your comments on the manpower problem, the busyness problem, management company audits or government relations. If you have questions or comments about any aspect of CDA or its function in areas such as accreditation, the Dental Awareness Program, the CDA Resource Centre, the Journal, the pamphlet program, fluoridation or any other area, Dr. Crawford is available April 17, from 8:30 to 4:30 to address your concerns or answer your questions.

CALL THE PRESIDENT

April 17, 1985
8:30 to 4:30 Eastern Standard Time



Téléphonez à frais virés

Call Collect
613-523-1770

LE PRÉSIDENT DE L'ADC ATTEND VOTRE APPEL!

Le 17 avril 1985, de 8h30 à 16h30, heure normale de l'Est, le président de l'ADC, le Dr Ralph Crawford sera à la disposition de tous les dentistes du Canada qui voudront s'entretenir avec lui. Pour le rejoindre, il suffira de composer le (613) 523-1770, en ayant soin de faire virer les frais.

Avez-vous des questions à poser ou des commentaires à formuler sur des sujets qui intéressent tous les dentistes canadiens? Vous demandez-vous ce que l'Association dentaire canadienne peut faire pour vous? Si oui, téléphonez au Dr Crawford. Celui-ci aimerait connaître votre avis touchant les problèmes des ressources en main d'oeuvre dentaire, la clientèle des cabinets, la vérification des sociétés de gestion ou les relations avec le gouvernement. Il sera également ouvert à toute suggestion ou commentaire touchant l'ADC et ses opérations dans les domaines suivants: l'agrément, le Programme de sensibilisation dentaire, le Centre de documentation de l'ADC, le Journal, les publications à l'intention du public, la fluoruration, etc.

N'oubliez pas: le 17 avril, de 8h30 à 16h30, le président de l'ADC attend votre appel!

APPELEZ LE PRÉSIDENT

le 17 avril 1985
de 8h30 à 16h30
HNE

Studies show Listerine can be instrumental in reducing plaque.

Recent studies conducted by independent researchers show that Listerine's antiseptic action can be instrumental in reducing dental plaque.

One recent controlled clinical study, conducted over a 6 month period, showed that – when used twice daily as part of a regular oral hygiene regimen – Listerine Antiseptic *significantly reduces levels of existing, accumulated plaque,* as compared with vehicle or water control rinse scores.[1]

And other controlled clinical studies – which scored plaque build-up following a thorough prophylaxis – demonstrate Listerine Antiseptic's ability to *effectively reduce plaque development* when used twice daily in addition to regular oral hygiene.[2,3,4]

So in addition to daily brushing and flossing, recommend Listerine Antiseptic to your patients for even greater plaque protection between visits. Studies show that it can be a significant adjunct to mechanical methods of plaque reduction!

To obtain clinical evidence or additional product information, write to:

Warner-Lambert Canada Inc.,
Oral Hygiene Technical Services,
2200 Eglinton Ave. E.,
Scarborough, Ont. M1K 5C9.

LISTERINE

An effective tool against plaque.

REFERENCES:
1. LAMSTER, I., et al.: Clin. Prev. Dent., 6:12 (1983).
2. MENAKER, L. et al.: Ala. J. Med. Sci., 16:71 (1979).
3. ROSS, N.M., et al.: Warner-Lambert research report #955-0875 (1976).
4. YANKELL, S.L., et al.: Warner-Lambert research report #955-0893 (1976).

Active ingredients: Alcohol 21.9% W/V, Eucalyptol 0.091% W/V, Thymol 0.063% W/V, Menthol 0.042% W/V.

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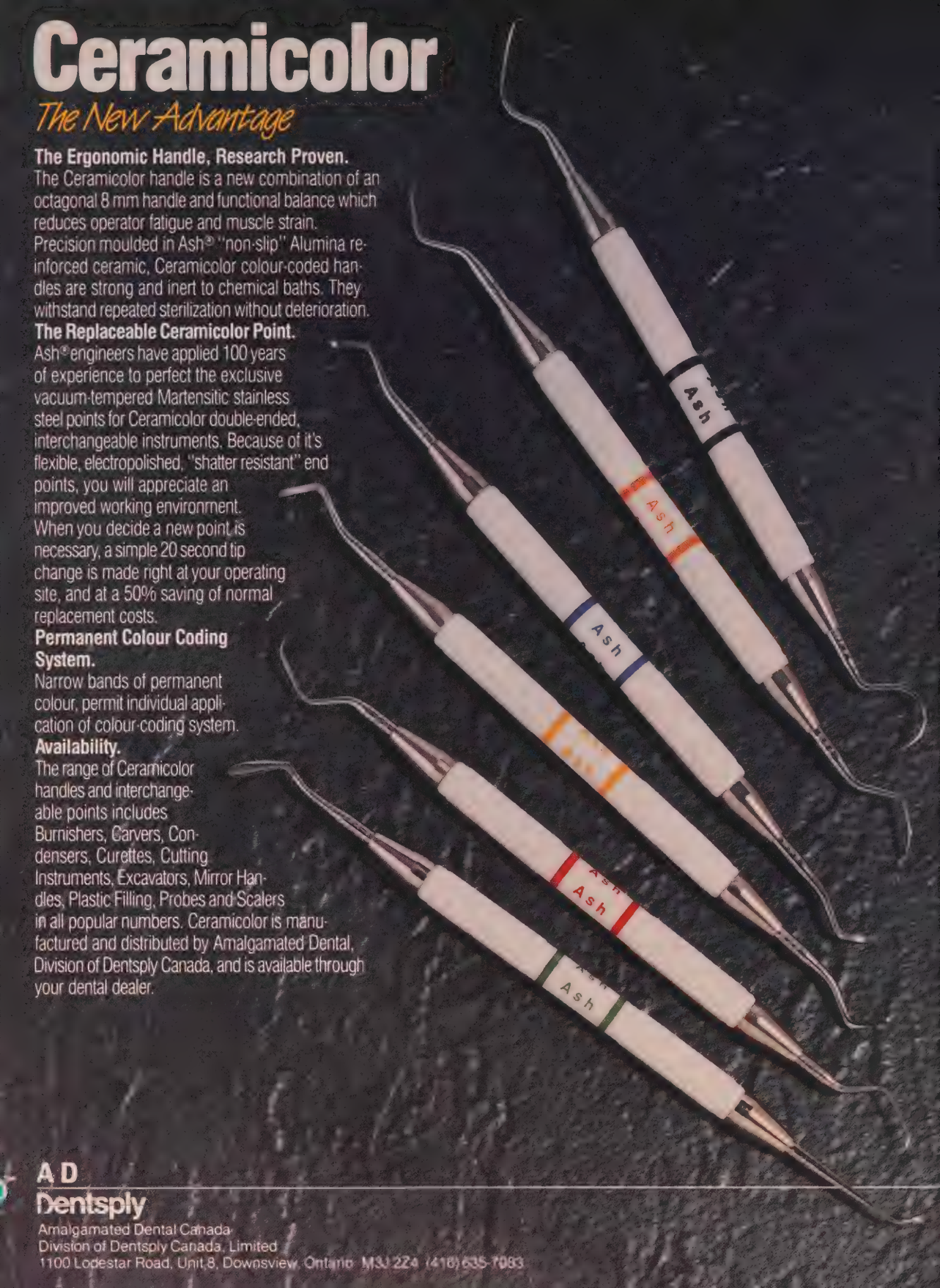
The New Advantage

The Ergonomic Handle, Research Proven.
The Ceramicolor handle is a new combination of an octagonal 8 mm handle and functional balance which reduces operator fatigue and muscle strain. Precision moulded in Ash® "non-slip" Alumina reinforced ceramic, Ceramicolor colour-coded handles are strong and inert to chemical baths. They withstand repeated sterilization without deterioration.

The Replaceable Ceramicolor Point.
Ash® engineers have applied 100 years of experience to perfect the exclusive vacuum-tempered Martensitic stainless steel points for Ceramicolor double-ended, interchangeable instruments. Because of it's flexible, electropolished, "shatter resistant" end points, you will appreciate an improved working environment. When you decide a new point is necessary, a simple 20 second tip change is made right at your operating site, and at a 50% saving of normal replacement costs.

Permanent Colour Coding System.
Narrow bands of permanent colour, permit individual application of colour-coding system.

Availability.
The range of Ceramicolor handles and interchangeable points includes Burnishers, Carvers, Condensers, Curettes, Cutting Instruments, Excavators, Mirror Handles, Plastic Filling, Probes and Scalers in all popular numbers. Ceramicolor is manufactured and distributed by Amalgamated Dental, Division of Dentsply Canada, and is available through your dental dealer.



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Amalgamated Dental Canada
Division of Dentsply Canada, Limited
1100 Lodestar Road, Unit 8, Downsview, Ontario M3J 2Z4 (416) 635-7093

Resource Centre de documentation

FLUORIDE MOUTHRINSES AND TOPICAL FLUORIDES

LES RINCE-BOUCHE FLUORURÉS ET LES FLUORS D'USAGE TOPIQUE

1. Gray, A.S., Gunther, D.M. and Munns, P.M. *Fluoride paste and rinse in a school dental program*. Canadian Dental Association Journal, v. 46, no. 10, October 1980, pp. 651-654.

2. Hagarty, T.J. and Shannon, I.L. *Enamel solubility reduction by commercial mouthrinses containing 0.05% NaF*. General Dentistry, v. 27, no. 3, May-June 1979, pp. 46-49.

3. Heifetz, S.B. and Horowitz, H.S. *The amounts of fluoride in current fluoride therapies: safety considerations for children*. Journal of Dentistry for Children, v. 51, no. 4, July-August 1984, pp. 257-269.

Abstract:

With the increased use of various fluoride preparations for caries prevention, all dental personnel should know their potential toxicity and the margins of safety associated with their use. An understanding of the body's mechanisms for handling fluoride provides a rational basis for assessing the possible risks of excessive fluoride ingestion. Five to 10 grams of sodium fluoride is considered a Certainly Lethal Dose (CLD) for a 70 kg adult. One quarter of the CLD can be ingested without producing serious acute toxicity, and is known as the Safety Tolerated Dose (STD). Practitioners should use only FDA- or ADA- approved products, employ recommended methods for their delivery; know their toxicity; and be familiar with emergency measures for treating accidental overdosages. The risk of adverse effects is small, when fluorides are handled judiciously.

4. Horowitz, H.S. *Alternative methods of delivering fluorides: an update*. Dental Hygiene, v. 57, no. 5, May 1983, pp. 37-43.

5. Jones, J.C., Murphy, R.F. and Edd, P.A. *Using health education in fluoride mouthrinse program: the public health dental hygienist's role*. Dental Hygiene, v. 53, no. 10, October 1979, pp. 469-473.

6. Laswell, H.R., Pacher, M.W. and Wiggs, J.S. *Cariostatic effects of fluoride mouthrinses in a fluoridated community*. Journal of the Tennessee Dental Association, v. 55, no. 4, October 1975, p. 198.

7. Levine, R.S. *An initial clinical assessment of a mineralising mouthrinse*. British Dental Journal, v. 138, no. 7, April 1, 1975, pp. 249-253.

8. Magness, W.S., Shannon, I.L. and West, D.C. *Office-applied fluoride treatments for orthodontic patients*. Journal of Dental Research, v. 58, no. 4, April 1979, p. 1427.

9. O'Riordan, M.W. and Forrester, D.J. *Fluorides in dental practice: Update for the 80's*. Journal of the Michigan Dental Association, v. 63, no. 2, February 1981, pp. 151-153.

10. Packer, M.W. and others. *Cariostatic effects of fluoride mouthrinses in a non-fluoridated community*. Journal of the Tennessee Dental Association, v. 55, no. 1, January 1975, pp. 22-26.

11. Svanberg, M. and Westergren, G. *Effect of SnF2, administered as mouthrinses or topically applied, on Streptococcus mutans, Streptococcus sanguis and lactobacilli in dental plaque and saliva*.

Abstract:

Mouthrinsing with SnF2 reduced the Streptococcus mutans population in plaque and saliva and the proportion of Streptococcus sanguis in plaque. The effect was of short duration: 2 weeks after treatment the values of S. mutans in plaque and saliva were even higher than the pretreatment values. Topical SnF2 applications reduced the S. mutans population in plaque and saliva but did not reduce the proportion of S. sanguis in plaque. The effect was prolonged: 4 weeks after treatment the S. mutans population in interproximal plaque remained significantly reduced and the salivary levels of the organism had not fully returned to pretreatment levels. Both SnF2 treatments significantly increased the salivary levels of lactobacilli. The values of lactobacilli in saliva remained significantly increased 4 weeks after the SnF2 mouthrinsing but had almost returned to pretreatment levels within 2 weeks after the topical SnF2 applications. The findings suggest that the cariogenic potential of dental plaque is differently affected depending on whether a drug is administered as a mouthrinse or is applied topically.

12. Torell, P., Gromark, P.O. and Edward, S. *Fortnightly fluoride rinsing combined with topical paintings with a fluoride solution containing Fe- and Al-ions*. Swedish Dental Journal, v. 7, no. 1, 1983, pp. 23-31.

13. Trask, P.A. *Orthodontic positioner used for home fluoride treatments*. American Journal of Orthodontics, v. 67, no. 6, June 1975, pp. 677-686.

14. Weesner, B.W., jr. *Topical fluoride: a status report*. Journal of the Tennessee Dental Association, v. 61, no. 3, July 1981, pp. 13-16.

15. Yanover, L. *Fluoride therapy in preventive dentistry*. Ontario Dentist, v. 58, no. 10, October 1981, pp. 14-18.

16. Yanover, L.R. *Home fluoride care*. Ontario Dentist, v. 54, no. 6, June 1977, pp. 19-21.

One copy of the above articles is available at no charge from the library to all CDA members: Non-members will be charged $5. This bibliography was generated with the help of MEDLARS.

La bibliothèque de l'ADC offre gratuitement à ses membres et pour $5 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS.

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TITRES EN BIBLIOTHÈQUE

The following current acquisitions are available on loan from the Resource Centre/ Library.

Les titres indiqués ci-dessous sont maintenant disponibles à la bibliothèque/centre de documentation de l'ADC.

1. Campion, Frank. *The AMA and U.S. Health Policy Since 1940*. Chicago: Chicago Review Press, 1984. 603p. 1 copy.

2. Cohen, L.K. and Bryant, P.S., editors. *Social Sciences and Dentistry: A Critical Bibliography*. Volume II. London, England: Quintessence Publishing Company Ltd., 1984. 429p. 1 copy.

3. Eversole, Lewis L. *Clinical Outline of Oral Pathology: Diagnosis and Treatment*. 2nd edition. Philadelphia: Lea & Febiger, 1984. 434p. 1 copy.

4. Rozovsky, Lorne Elkin and Rozovsky, Fay Adrienne. *The Canadian Law of Patient Records*. Toronto: Butterworths, 1984. 148p. 1 copy.

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Previously unpublished articles, critical reviews of material on advances in dentistry and clinical reports are welcomed by the Journal of the Canadian Dental Association for consideration for publication. Material is accepted by the Journal on the understanding it is submitted solely to this publication.

Scientific Articles: should not exceed 2,500 words with a minimum number of illustrations, diagrams, photographs, tables or graphs. An average of 20 references is acceptable.

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Clinical Reports: are brief (up to 1,500 words) reports, case histories and clinical observations. References should be limited and a minimum number of illustrations used.

Opinions: fully documented (800 words or less), are welcome for publication at the discretion of the editor.

Word Count: is based on the calculation of approximately 250 words typed, doubled-spaced on $8^1/_2 \times 11$ paper.

Manuscript Requirements: Submit three (3) copies (original and two copies) to the editor, Journal of the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6. All graphs, photographs, charts and tables must also be submitted in triplicate.

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1. Hechter, F.J. Symmetry and dental arch form of orthodontically treated patients. JCDA 44:173-184, 1978.

For books, give the author's name, book title, location and name of publisher, year of publication:

2. Kilpatrick, H.C. Work simplification in dentistry, ed. 2. Philadelphia, Saunders, 1964.13

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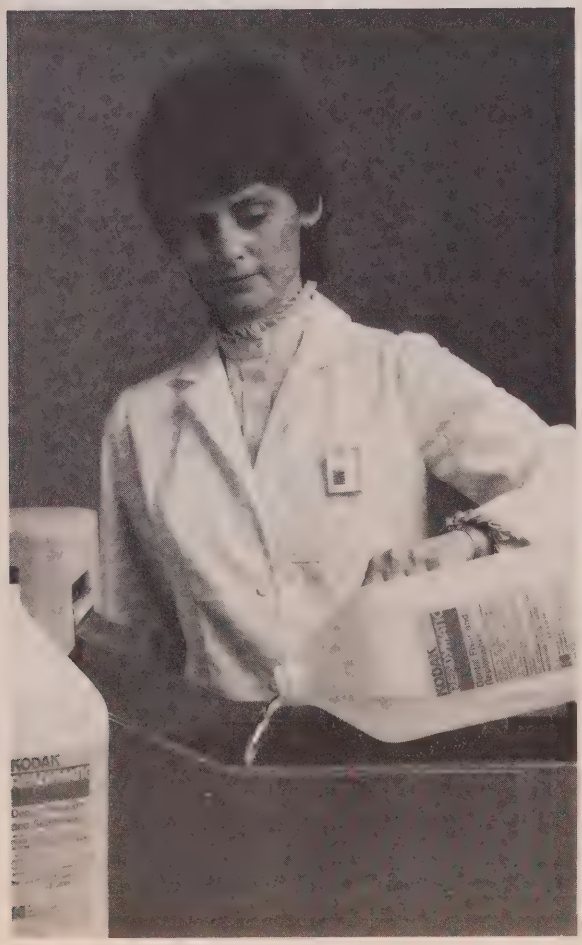

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Book Reviews

TECHNIQUES IN CLINICAL ENDODONTICS

Edited by Harold Gerstein

W.B. Saunders Co.
Toronto, Ont. 394 pp.

In this book, Dr. Harold Gerstein brings together well-known authorities, describing different procedures and approaches to most of the situations encountered in endodontic practice.

The book does not deal with the basic science issues that precede endodontic treatment, nor does it explore the surgical approaches that might solve some unfortunate complications.

The first chapter dealing with the access of pulp chamber and location of root canals is the key issue to smooth successful endodontic treatment. It explains in detail various techniques to cope with different anatomical situations.

The following chapters explain location and preparation of canals, fractured instruments and how to deal with them. They also describe the customization of master gutta percha in large diameter canal or immature apical foramen.

The book discusses different techniques of root canal fillings from lateral condensation as well as the treatment of lateral canals to vertical compaction of warm gutta percha. Diffusion through chlororesin to seal and soften the master gutta percha point is fully explained.

The discussion of pulp therary for children and adolescents, with emphasis on all forms of pulp treatment, is of interest for the everyday endodontic practice.

The endodontic role of calcium hydroxide in injured teeth and root closures therapy for incompleted developed teeth is also thoroughly described in the book. This material has an impact on certain cases that otherwise would have had poor prognosis.

Chapter nine is devoted to new directions in the endodontic field. It is becoming acceptable that root canals are actually channel systems and, as such, should be as clean as possible and be obturated in all their irregularities. There is in this chapter a thorough description of endodontic pressure syringe, injection moulded thermoplasticized gutta percha and the use of polyhydroxy-ethylmethacrylate.

The clinical success of endodontic treated teeth depends mainly on the quality of their restorations. The last chapter focuses on restorations and techniques following endodontic therapy and their role in achieving normal function and aesthetic.

The book has great value to the dentist who is facing different complex situations in his endodontic practice, since no single approach can be applied to all situations.

This book was reviewed by
Dr. Monir N. Attalla, B.D.S.
Calgary, Alta.

TISSUE MANAGEMENT IN RESTORATIVE DENTISTRY — POSTGRADUATE DENTAL HANDBOOK SERIES

W.F. Malone and Z.C. Porter

John Wright PSG Inc.
Littleton, Mass.
Published — September 1982, 344 pp.

The book is a collection of monographs without a central theme aimed at the general dental practitioner who provides relatively sophisticated dentistry for his or her patients. The publication's title is somewhat misleading in that its contents reflect more scope of the subject than one would expect and great technical detail is covered in some areas, rather than concepts, while some other pertinent subjects are treated somewhat summarily. The co-editors, Drs. Malone and Porter, preface the book with: "current views on some associated timely topics are presented, but the intent is not to cover all concepts of periodontal-prosthodontic therapy".

An outstanding group of experts in various fields have contributed to the book. In all instances their presentations are clearly presented. Unfortunately, some impact is lost by the inferior quality of the photographic reproductions which is either of technical origin or related to the quality of the paper, the latter being more likely.

Some chapters are particularly good. In this category should be included that by Dr. Barrington on Root Planing and Gingival Curettage; Dr. Brown on the Role of Orthodontic Tooth Movement in Restorative Dentistry and Dr. Yukna on Mucogingival Problems and their Management.

The inclusion of some topics and chapters is questionable and clutters the publication somewhat. A second chapter on Orthodontics is redundant. The inclusion of Crevicular Fluid Evaluation as a topic unto itself in such detail is beyond the scope and appeal of this book. Extensively detailed chapters on Bone Grafts, Reconstruction of Endodontically Treated Teeth and Tooth Supported Dentures stretch the parameters implied in the book's title.

Exception is taken with the concepts implied and stated in the chapter on Electrosurgery. While it is a valuable adjunct in the restorative practice it is by no means a panacea to solve one's problems of restorative access, rather it is a somewhat dangerous and unforgiving tool, particularly in inexperienced hands. "If you can't do it with cold steel, you can't do it with a hot wire".

One gets the impression that somebody was writing a textbook on dentistry and when finished had several chapters left over which they lumped together and gave this title, thus, the series editor's prediction, "that the reader will come away with answers to his current problems as well as some provoking questions".

The publication could have been streamlined and its impact optimized by staying a little closer to a theme. This would enhance some excellent presentations on timely topics. A few areas, which were mentioned briefly, could have been expanded and included. In this category the subject of

maintenance care, the parameters of measuring progress and recording same is most timely.

The need to "encourage open communication between two dental specialties: Periodontics and Restorative Dentistry" is unquestioned, but this publication falls short of its stated goal. This is unfortunate in that some excellent contributions will be temporarily lost or delayed in their exposure. The producers of this series should redesign and republish this material with the suggested modifications.

This book was reviewed by
Dr. N.H. Andrews,
Halifax, Nova Scotia

MICROBIOLOGY FOR DENTAL STUDENTS, 3RD EDITION

T.H. Melville and C. Russell

William Heinemann Medical Books Ltd.
London
Distributed by: International Ideas Inc.
1627 Spruce Street
Philadelphia, Pa., U.S.A. 19103
Soft cover: 394 pages, $32.00

Like many microbiology courses taught to dental students, Melville and Russell's *Microbiology for Dental Students* is divided into three major parts: 1) basic microbiological principles, 2) medical microbiology, and 3) role of oral microorganisms in health and disease. These are natural divisions for taking a complete novice, which many dental students tend to be, from the basic knowledge necessary for understanding the nature of infectious diseases to applied microbiology relevant to modern dental practice. Unfortunately, their true and complete separation in this book leaves the impression that these sections are three independent areas of study. Dental students require constant reminders and examples that basic principles of infection are alike, regardless of the organ system studied. This book could have been improved by additional cohesive paragraphs tying the information in subsequent sections to earlier chapters and using examples of oral bacteria to illustrate the basics introduced in the beginning. In this regard, this new edition of Melville and Russell is an improvement over previous editions, but a fairly conservative one.

The overall writing style is relaxed and informative. The authors seem to have taken care to explain microbiology in a conversational tone which should be easy for dental students to comprehend. Excluding the clear color plates demonstrating colony and cellular morphology and some new electronphotomicrographs of dental plaque and bacterial surfaces, the book is not as well illustrated as an introductory course demands. There is very little rhyme or reason why many photos are included and others omitted.

Better illustrations (and labelling of illustrations, which is often lacking) would have improved the clarity of Part I. This area leaves too much to the novice's imagination. The chapters on physiology and metabolism appear adequate. However, the chapters on genetics and antibiotic resistance are not up to date. The chapter on growth characteristics could certainly illustrate more sophisticated methods of anaerobic culturing than only the Gaspak jars included. The chapters on host-parasite interactions and immunology are easy to follow. They could have been much improved by demonstrating examples of how these principles also apply in the oral environment.

Part II is a straight-forward, rather boring, bug-by-bug description of major groups of pathogens. Dental students require this information because they are to function in practice situations dealing with populations susceptible to a wide variety of infections. But why make the presentation of the educational material more deadly than the diseases being taught? This is a section of the book which cries out for periodic summaries, interesting cross-references, and perhaps short case reports. The first three chapters of Part II are devoid of photos. When one finally appears in chapter 18, it is of "flagella of *Pseudomonas aeruginosa*." Why is this more important than, for example, a diagram comparing the pathogenesis of rheumatic fever and glomerulonephritis? Why does the chapter on virology contain a fully labelled illustration of a fertile egg and no visual aid for understanding the complex mechanism of interferon? Certainly the latter should be considered a more important idea to grasp.

Part III, on oral microbiology, starts with what is probably the best chapter in the book. In simple terms, it introduces the complexity of the oral flora, ecological pressures determining the distribution of the flora, and the impact of endigenous and exogenous oral infections. For a book which the authors claim "to retain the idea of teaching microbiology to dental students rather than teaching dental microbiology" this chapter goes a long way to do both. It could have, and should have, been linked to basic principles of host-parasite interactions in Part I. The rest of the chapters are up to date for four or five years ago, when this edition was probably written. However, the authors' great downplay of *S. mutans* in dental caries etiology is seen by me as unfortunate. Dental students require a strong statement of what cariogenicity is . . . and if one analyzes the literature, *S. mutans* can be used as an outstanding, albeit not sole, example of a highly cariogenic bacterium. Considering periodontal disease, this edition was probably prepared for the market just prior to the recent explosion of information on rapidly advancing forms of disease, especially juvenile periodontitis. The discussion is rather good but just slightly behind the times. The chapter could use additional information on experimental periodontal disease in animals and on darkfield or phase-contrast microscopy relative to periodontal health and disease. Fungi, especially *Candida*, are covered rather well. Although they are not prokaryotic, the text could use some information on amoebae and other nonmicrobial parasites.

In addition to the three major parts, Melville and Russell provide the reader with a very useful introductory taxonomic classification table adapted from *Bergey's Manual of Determinative Bacteriology* (with only one misspelled genus, *Bacteroides*), an appendix of bacteriological media and methods (which unfortunately avoids selective media and methods specific for many oral bacteria), and a very brief list of recommended alternate texts (which encompasses the only reference material for students who might seek additional information).

Microbiology for Dental Students would make an appropriate text for oral microbiology courses only if it were supplemented with a very strong lecture series including clear visual aids. All in all, the authors have done a reasonable job in concentrating into readable form a vast amount of material aimed at a traditionally unreceptive audience. However, I do not feel that their approach renders learning the subject, or teaching it, more enjoyable.

This book was reviewed by:
Dr. Richard P. Ellen
Professor of Dentistry
University of Toronto

"DENTAL LOCAL ANALGESIA" A PROGRAMMED INTRODUCTION

R.W. Matthews

Wright PSG
80 pages, $9.50

This is a rather small textbook being only some 68 short pages in length. The Preface claims that it is a "self-pacing programmed text intended as a foundation course for new clinical dental students". This is accomplished by providing a portion of information about the subject and then asking a question of the reader. Depending upon his answer, he is then instructed to turn to a certain page. No matter what the answer,

right or wrong, the reader is eventually lead through the complete programme.

This format does have the effect of commanding one's attention throughout since the continual querying prevents the soporific effect of textbooks full of information which must be absorbed by the student. The information provided is achieved in a very concise manner, again enhancing the ability of the student to absorb the facts. The illustrations are adequate if somewhat limited with some of the photographs suffering from either poor reproduction or incorrect exposures at the time they were taken.

There are several disadvantages to this book however, some minor, some moderate but none critical.

In the minor category is the condescending exclamations preceding the answers. These include "Correct, very good!", "so far, so good", and "Tricky one, this!". Even more irritating, however, is the use of the term "analgesia" in the title and throughout the text where "anaesthesia" is more appropriate – this despite the opening paragraph which differentiates between the two conditions!

The main problem with this booklet, however, is that the pertinent information relating to the question is often given *after* the question is asked. This would be a frustrating situation for a student attempting to master the area of local anaesthesia for the first time.

If this publication were marketed as a vehicle for updating a dentist's knowledge of local anaesthesia it might be more acceptable. Even at that, however, omissions such as the Gow Gates technique suggest a certain incompleteness in the work. It is doubly unfortunate that this effort should be brought forth at a time period when better illustrated textbooks have been produced, such as that by Schultz Medical Information, and when more complete textbooks on the subject have been marketed such as those by Malamed and by Yuegalis and Jastak (interestingly both by the same publisher and almost at the same time).

The situation is fairly common in modern textbook publications – a void in an area is recognized over several years and then suddenly overfilled with some texts better than others.

In conclusion this book is small enough and easy enough to read that it should be enjoyed by a practicing dentist seeking a review of the subject. However, it would be difficult to recommend as an undergraduate text.

This book was reviewed by
Dr. David Donaldson,
Dept. of Restorative Dentistry,
Faculty of Dentistry,
University of British Columbia,
Vancouver, B.C

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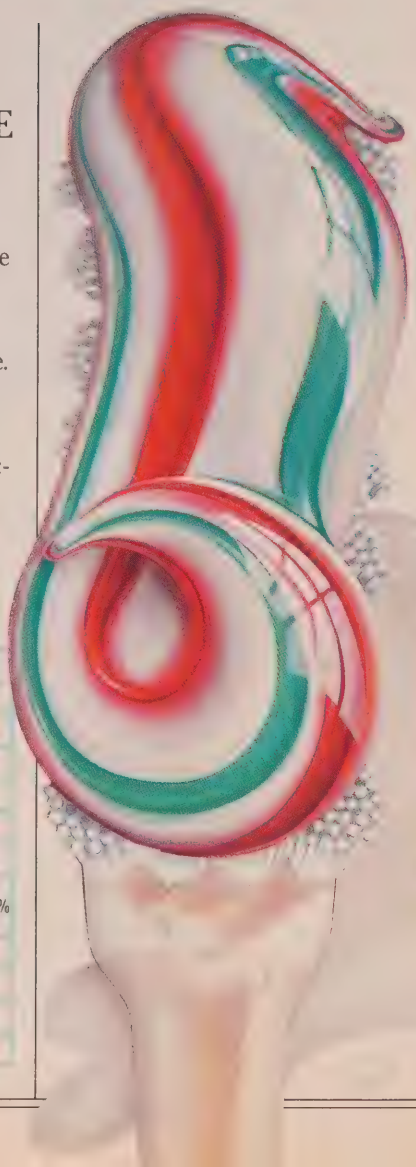

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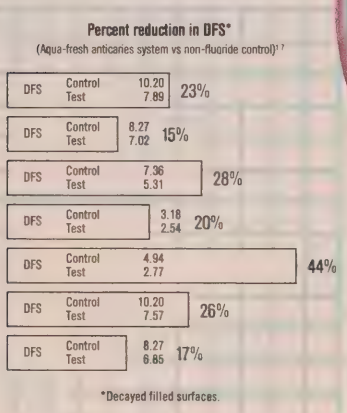

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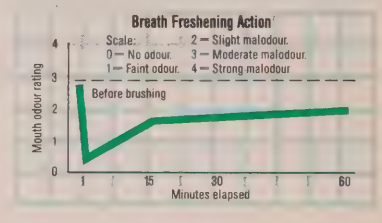

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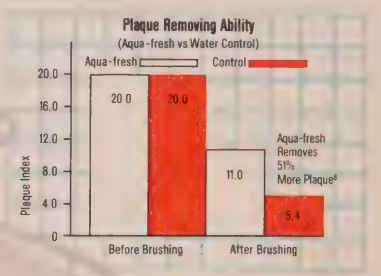

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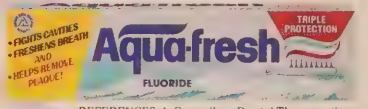

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*T.M. Reg'd.

1985 CDA CONVENTION
GRADUATE STUDENT PRESENTATIONS

PREAMBLE

At the 1985 National Convention, the Canadian Dental Association is organizing a forum which will allow graduate students to present current information on their specialty or research projects.

ELIGIBILITY

Dentists or dental hygienists who will be enrolled, as of September 1985, in the final year of a graduate program, at a Canadian university.

METHOD

Interested students should submit a typed abstract of a 15-minute presentation describing a current aspect of their major area of study or research activity. This should be accompanied by a black and white passport photograph, a curriculum vitae, and a letter from the Director of Graduate Studies verifying:

1. The enrollment status of the student;
2. That the presentation represents graduate work performed by the student;
3. An estimate of anticipated travel and accommodation expenses.

The abstract and supporting documents should be forwarded to the following address before April 30th, 1985:

Dr. John Hardie
Scientific Chairman
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario. K1G 3Y6

NOTIFICATION

The Scientific Committee of the 1985 Convention will choose eight presentations which represent a spectrum of dental graduate studies being undertaken in Canada. Successful students will be notified early in June 1985.

AWARD

Successful applicants will be invited to present their papers during the Scientific Program of the 1985 Convention which will be held in Ottawa from September 29th to October 2nd. The students will be the guests of the Convention Committee during the day of the presentations. If necessary, funds will be available for travel and accommodation.

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EVALUATION OF TWO DENTAL PRACTICE MANAGEMENT PROGRAMS

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INTRODUCTION

There are more than twenty-five Dental Practice Management (DPM) software programs available to Canadian dentists. The general criteria for the selection of DPM software and a listing of those available and the criteria which they fulfill has been given elsewhere.[1] An evaluation of two of these programs is presented herewith. The two programs are that of the CYMA Corporation and that of Univair Incorporated.

CYMA Dental Software

This is a nice program for the small dental office, especially for the fastidious practitioner who has a penchant for things neat and orderly and who will accommodate the somewhat fussy way of entering information that this software requires. The program which is quite comprehensive (see Overview of Dental Practice Management Software[1]) will provide outstanding rewards in economy of time and efficient practice management and can be learned in a matter of hours by the dentist and his business office staff without outside help. By small practice, I do not mean that only one dentist can be accommodated by the program, because any reasonable number of providers can be entered into the system. But it really seems conceived for the small office by the manner in which patient code letters are utilised to separate patient categories in terms of the treating doctor or other category (see later). Furthermore there is evidently an economy of lines of programming language such that the whole dental practice management (DPM) program resides on one diskette, including the operating system (the author used MS-DOS on a Hyperion computer although the program is also available on CP/M-86 and multi-user on Turbo-DOS) allowing a floppy-disc system to be used (a computer with a dual-floppy drives, and printer) without harddisc storage. Hence a small office can use one or two data discs in the second floppy drive until the time arrives that it requires the greater storage that a harddisc will provide. A 132-column printer is required or a compressed 80-column printer. The author used a TI-855 printer.

The program is elegant in that there is a simple menu system from which the appropriate subprogram can be called up, with the function of each subprogram rationally separated from the function of every other subprogram. Furthermore, there is a structure inherent which minimizes operator error, and the printed output is aesthetic and functional.

Once the program is installed and the treatment procedure codes entered, the insurance company list entered, and the current patients are input, the sequence of events in normal operation is as follows: the patient enters the practice, his number is accessed by a manual system or by means of a printout of the patient list or through the software itself by a search of its database fields (the latter will take the operator longer than does a manual method). His ledger is accessed by use of his patient number and the ledger is examined on screen, he receives treatment by the doctor or other provider, the charges and payment are entered by means of the transactions subprogram or the insurance subprogram, the entries are posted by means of the posting subprogram, and the patient is given a printed statement of account or his insurance form or both. Or, if desired, a "batch" method may be used, whereby all entries are input at one time using the charts or vouchers or any other primary source for the transactions. In the latter case, the statements of account and the insurance forms are also printed out at one time, usually right after posting of transactions to the patient accounts. By virtue of the input of this information alone, the daily journal of transactions (day-sheet), patient ledgers and management reports can be generated.

As previously indicated[1], this program provides the practice with a daily journal of transactions (daysheet), an aged accounts receivable report, detailed history of each patient account, detailed patient statements, and CDA-standard insurance forms. It will allow the user to input fee codes, English (or French) descriptions of the treatments to which the fee codes refer, plus the intended fees themselves, the latter items to be generated, within the transactions subprogram, simply by the input of the fee codes themselves. Patient lists and labels can be generated, and can be accessed by a word processor. A practice analysis report will also be generated.

Account Numbers

Account listing by guarantor and alphabetic patient listing are done in the following manner: the guarantor's account number must have a zero as a terminal digit whereas his dependents will have a number which cannot end in zero, although all the other characters will be identical to the guarantor's number. This is the mechanism by which the program maintains the integrity of the billing of family member accounts to the guarantor. The actual number takes the

form of an AA000 sequence, the alphabetic characters standing for the first two letters of the patient's surname, the numerals being determined on an arbitrary basis, subject to the condition mentioned above. For instance, patient Johnson (guarantor) could be J0230 and his spouse would be J0231, and their children perhaps J0235 and J0236. It is in this manner that a listing of patients by number is to a considerable degree also an alphabetic listing by patient name, although not rigorously an alphabetic listing. It is this sort of dual-purpose programming mechanism which allows the whole DPM program to be stored on one program diskette, allowing the second drive of a dual-floppy system to be used for one or two data diskettes. The program will accept a five-character numeral, but the alphabetic listing will be lost.

The above method may present some difficulty for a practice which already utilizes chart numbers since the latter would not be able to be integrated into the system. What the author suggests in this case, is to obtain a printout or labels of all patients entered into the system and to cross-reference the current chart numbers to these. The program does not contain an account-number generator. The number is determined by the operator. If by chance a number has already been utilized, the already-entered patient data will be presented upon input of the particular number and carriage-return.

To call up a patient name in order to determine the patient number takes a long time as the operator moves the cursor through all the fields in the limited data-base subprogram by which a list may be generated. It is a better practice to generate, as suggested above, a list of all patients and their account numbers either on a printout or on labels for affixing to a rotating card holder for later referral without going through this procedure on a routine basis.

Fee Codes

The program, of course, will generate a description and fee within the transactions mode upon the input of the fee code. The fee code mode is entered from the menu, and the official fee codes plus those used internally by the practice to accommodate payments, finance charges and adjustments may be input and modified at any time. In this program, only one fee can be assigned to a particular fee code (for instance, a separate schedule of fees for each of two or more dentists cannot be utilized). Nor is there an automatic computation of a fixed percentage of the fees for special patients, for instance staff members. Whenever desired, however, the fee can be overriden with another in the transactions mode.

The program does not permit the use of acronyms to generate the fee code-description-fee sequence. Acronyms can be typical office shorthand such as "SXM" for "specific examination", and help prevent transcriptional errors which occur when entering data from patient charts or vouchers, and are helpful to new staff members. They would be a decided advantage in this program, but of course are not essential, especially with staff members who are fastidious in their work.

Patient (Billing) Codes

Patient 'codes' are utilized to separate patient accounts in terms of doctor rendering treatment (a necessary function in a multiple-provider office), and can be used for many other functions such as "flagging" patients to whom to send a statement, to assess finance charges, etc. Since only a one-character code can be utilized per patient, one might believe that the above functions are mutually exclusive, but they in fact are not if combinations of codes are used. For instance, patients can be separated by doctor, by finance charge status, and by statement status by assigning doctor-1 the codes A (for doctor-1, no statement and no finance charge), B (for doctor-1, no statement but finance charge), C (for doctor-1, statement plus finance charge) and D (for doctor-1, statement but no finance charge). Hence the income of doctor-1 can still be separated from that of doctor-2 (who could use codes E, F, G, and H) but still allow separation of other categories of patients. A point is reached, however, that the information will become too disparate; for instance, although the income of doctor-1 can be separated from that of doctor-2, he must aggregate four figures, in this example (that of A, B, C and D).

The use of billing codes to separate patient accounts in terms of provider is not the most ideal instrument to effect this partition since a patient may be seeing more than one dentist in a practice, and this method will not give a clean accounting separation. If the practice does not foresee this eventuality, then billing codes are a satisfactory method of separating doctor income.

Gender Codes

The CYMA program uses a set of eight gender codes for insurance purposes (for instance, a 1 for male, self-insured; a 2 for male, spouse of the insured; a 7 for female, child of the insured; etc.). These codes are entered upon patient registration. The author recommends that the table of eight codes be posted at the reception desk for easy reference.

Patient Registration

On entering a series of patients, there is no mechanism for default values, for example, when the city, province, postal code or telephone area code is the same for most patient entries. Furthermore, the information entered for the preceding patient remains on screen until changed, giving the operator the illusion that he can default the values which he sees in front of him.

The input of an area code for telephone numbers appears to be obligatory, since the hyphen which is placed by the program will otherwise be placed incorrectly. Alternatively, the space bar must be pressed three times.

The guarantor must always be entered into the system when adding a new patient, whether or not he himself will become a patient, because it is he who will be responsible for the account and who will be billed at the time of patient statement generation.

Two insurance carriers may be registered when the patient account is set up to facilitate the billing of a primary and secondary insurance company.

The method of configuring the patient statement is chosen at the time of patient registration, either the open-item or balance-forward method. The practice should probably choose one method and follow through for all patients. The difference between these methods has previously been discussed[1]. If the balance-forward method is selected, the program will request the entry of the past-due balance if any at the time of installing the patient. If the open-item method is chosen, all past-due items will need to be entered in transactions mode. This mechanism facilitates the conversion from a manual system.

It seems enigmatic that if the open-item method is used, then a referring party can be included on the patient account, to be accessed later by the limited data-base subprogram: this feature cannot be used if the balance forward method is chosen instead.

Insurance Companies

When setting up the software, the user will enter a list of insurance companies, and there is a subprogram for this procedure, which can be updated at any later time. Each insurance company is assigned a number which is used when registering the patient. Because a printout of this information cannot be generated within the program, the user is counselled to make a list as he proceeds or even prior to entering this data, to which he can refer when assigning patients to one or another of the insurance companies.

The author found that upon entering a new insurance company, the accidental use of an already-used number (there is no number generator) is not prevented by the program, resulting in accidental erasure of insurance company data and errors when printing insurance forms. Simply entering

the previously-assigned insurance code number will not bring up the previously-entered insurance information unless carriage-return is pressed twice.

Transactions and Insurance Forms

A transactions (named ''entries'') subprogram is utilized for the input of all patient charges and payments. The date of the transactions will default to the date entered on starting up the system for the day. Entry of the fee code will generate the description and the intended fee. The transactions are then posted to the patient account by a posting subprogram, accessed from the same menu as the transactions and patient entry subprograms mentioned above. As each transaction is entered onto the screen, the preceding one is eliminated; although this appears perfectly satisfactory, a better method would allow preceding entries to remain on the screen until all transactions are entered.

When it is contemplated that the patient will want a completed insurance form to take with him as he leaves his treatment appointment, the operator can choose the insurance subprogram immediately instead of the transactions subprogram. The charges and payments can be entered, and a walk-out insurance form can then be made, and thereafter the items can be posted to the patient account just as if they had been entered in the transactions mode. This expedites an otherwise longer procedure, that of printing an insurance form after the entry and posting of charges and payments to the patient account, since the batch mode of generating insurance forms has to be engaged, which requires the entry of a number of parameters such as range of patients, range of dates, etc.

If the operator desires, of course, all insurance forms can be printed in one operation by the batch method, and then mailed to the respective patients. The latter is more desirable in terms of economy of time and in terms of loading the printer with the required forms. Patients for whom an insurance form is not to be printed can be so flagged by use of a patient code (see above).

There is no mechanism within this program for introducing comments on the patient ledger which would not also print on the patient statement. These would be comments for internal use only, and may in any case not be required by a given practice.

Insurance Pretreatment Authorizations

Insurance pretreatment authorization forms can be generated easily by entering the charges as indicated above for the individual insurance form, but simply without posting the entries to the patient account.

Adjustments to Patient Accounts

Adjustments and writeoffs can be done essentially by assigning a procedure code number to this function to be accessed under the transactions mode and the patient account thereby credited or debited as required. The aggregated amount input to this code number must be reconciled to the total treatment rendered (practice income) at year-end or month-end if desired so as not to overstate practice income, since on the practice analysis it takes the form of a treatment rendered item. For example, a dishonoured cheque posted back to a patient account by means of an adjustment code number must be separated from real treatment otherwise income will be overstated by this amount.

Editing of Account and Editing of Transactions: Data Security

Because treatment charges or even the entire patient account can be edited or even altogether eliminated, it is important to control the patient account and transactions subprograms by the password facility provided. There is password protection for all other subprograms as well, including the entry of the program itself. The passwords when entered are not visible on the screen, but appear as asterisks.

Assignment of Insurance

This program does not contain a method of recording the billings allocated to a particular insurance company where the practice accepts assignment of insurance (collects the fee on behalf of the patient), nor will it calculate the patient's share versus the insurance company's share under such circumstance. If a 'procedure' code is designated to accommodate payments from a particular insurance company or for all insurance companies, however, aggregated insurance collections may be determined retrospectively.

Posting of Payments

There is no mechanism for the batch posting of third-party payments (for example, the posting of an insurance cheque covering payments for many patients). The individual patient account has to be called up. Such a mechanism, although convenient, is certainly not necessary.

Patient Ledger

The patient ledger is quite satisfactory in respect of the itemization of the patient account number, name, telephone number, treatment code number, tooth number and surface, document number (see later) and even number of days elapsed since treatment (open-item accounts), but could be improved by a description of the rendered treatment to facilitate acting on patient enquiries. A description can be configured by typing a brief description into the tooth number/surface rubric.

Patient Statements

The patient statements, which are made up for the guarantor only, indicate charges and payments for each of the guarantor's dependents, and includes aged balances. The patient statements require a preprinted form to look their best, but if this is not desired, the operator can type ''To professional services rendered'' under the comments rubric, together with any other message, which print just above the list of charges and credits, producing quite a satisfactory result.

Patients to whom a statement is not to be sent can be so flagged by the use of a patient code (see above).

Recall System

There is a recall system, and this is operated at the time of the entry of charges (transactions subprogram). When all the charges for the treatment have been entered, and it is desired to put the patient on recall, an 'N' is entered instead of the treatment code, then a 'P' for ''patient recall'', a somewhat tortuous route but one which appears to serve the user well. This will deliver the user into a new subprogram which allows him to input 3M for recall in three months, 6M for recall in six months, etc. and to specify by means of a treatment code number, the proposed recall purpose. This same route is utilized when the user desires to get to the main menu after inputting charges or payments: he must enter 'N' and then 'R' for ''return to menu''.

Contract Plans

The CYMA program handles contract (budget) plans very nicely, calculating the finance charges and monthly payments, and even printing a booklet of payment coupons as a reminder to the patient of his indebtedness, and the amount and due date

of each payment. Only past-due portions will be indicated under the aging report, a sophisticated feature.

Finance Charges

The finance charges subprogram calculates finance charges on overdue amounts of which the rate and the time from which the charge is to be applied can be determined by the practice.

Daysheet

The daily journal of transactions is excellent in that it provides an itemized documentation in chronological order of all treatment done that day by patient number, treatment code number, tooth number and surfaces, and document number (see below). As well, it provides a summary of the number of each treatment performed by patient number and the dollar figures for the latter, plus an itemization of all payments for the purposes of making a bank deposit. However, there are no patient names or descriptions (other than the treatment code number, tooth number and surfaces). This is an important feature for audit control of the day's transactions, because one can ascertain more easily that transactions have not been missed in following through the progression of the day patient by patient. There are also no descriptions on the patient ledgers other than those mentioned above. The operator can overcome this deficit by typing in the description on the line reserved for the tooth number and surface, immediately following the latter, and by writing the patient number on his schedule, vouchers or other primary reference source to facilitate the audit control.

Aged Accounts Receivable Report

The aged accounts receivable report, which lists either items or balances (whichever method has been chosen for the patients at hand) by 30, 60, 90 or over 90 days, or by other time parameters if only open-item accounts are being considered, lists the patient's telephone number with the account. This has also been done for the patient account ledger. This is a decided advantage for office staff desiring to act on overdue accounts. The only thing which would be of greater advantage is the capability of indicating two patient telephone numbers when setting up the patient, one for work and one for his residence. Currently only one telephone number is permitted.

Referral Report

If the referring party has been indicated on patient registration (only open-item accounts – see above), a referral trail report can be drawn up utilising the limited database management subprogram.

Practice Analysis Report

The practice analysis subprogram gives an analysis of income by the different treatments rendered, and a quantification and analysis of time as percent of total on a given treatment. It will also give the average adjustment as a function of the number of treatments rendered, and the change in the accounts receivable as a dollar figure and as a percentage increase or decrease for the period under review. This information is not calculated for each provider in the practice, however, and it would be helpful if this were the case.

Date of Last Visit Report and New Patient Report

A date-of-last-visit report can easily be configured using the limited database subprogram. A new-patient report cannot be generated.

Audit Trail

The audit trail is facilitated by a rubric called "document number" which appears in the transactions mode. This "document" number can refer to any of a number of primary entry documents, for instance, a manual day-sheet number or voucher numbers.

Appointment Scheduling

This program does not do scheduling of appointments.

Documentation

The documentation of this program has been very well done, facilitating its installation.

Installation

The software provides an installation program to permit installation on almost any computer. Many common computers are listed on a menu, permitting customization with a single keystroke. In installing this program for the Hyperion, the author indicated "ANSI STANDARD" on the computer configuration table.

Data-Base

The CYMA DPM program includes a limited data-base subprogram (called "patient list"), which, as with most of the other subprograms, can be accessed from the main menu. A data-base program allows the sorting of a defined block of information by "fields" which are none other than the predetermined units of information of which the information block is composed. The fields by which sorting can be effected in this program are the following: patients with balance-forward accounts; patients with open-item accounts; patients with a certain name or letter or group of letters in their name; patients of a particular city, province, postal code, or street; patients of a particular recall date range and for a particular recall treatment; patients of a particular patient code range; patients of a particular sex and family member status range; patients of a particular birth date range; patients of a particular range of dates last seen in the practice; patients of a particular insurance company; and patients of a particular referring party.

Month-End Processing

By accessing the "update patient entries" subprogram from the main menu, certain month-end procedures will be effected; these procedures include the updating of balance-forward accounts to reflect aggregated treatment items for the previous time period as a new "balance forward" amount, and the new aging of overdue amounts in these same accounts. The open-item accounts are at the same time purged of items which have been paid.

General

Use of the 'F' key to correct an error on the preceeding line when inputting data to this program is a valuable editing function, although it would be more convenient to be able to select a line of input data for editing at the end of data entry, when an error is more likely to be discovered. The word 'fix' is utilized to define this function, which initially may lead to confusion as to its real purpose.

The menu contains an arrow indicator to denote the subprogram last used, being a useful reminder to the operator of the last function performed.

The program contains a fair amount of error trapping to prevent operator error; for instance, if the operator indicates an insurance company code number which has not been set up in the program, a message will relate this inconsistency; similarly when an invalid patient account number or treatment code is used, or an invalid date sequence is used.

Univair Dental Software

The Univair program is a DPM program for the small-to-medium size dental practice. The program is quite comprehensive[1] and will certainly improve practice management and reduce the workload of the reception staff. The administrative unit for all transactions and all audit trails is the treatment "case" (see later) and the addition of this extra numerical classification unit within the patient account may discourage some users, but it may in fact be welcomed by others for the additional auditing control that it gives the practice.

The program requires residence on a hard disc to operate well. The author used a DEC Rainbow-plus with a ten-megabyte hard disc and DEC printer for the CP/M-86 version, and a Hyperion with ten-megabyte Ex-Chassis and TI-855 printer for the MS-DOS version.

The program utilizes a menu system from which a particular subprogram may be accessed, and there exists a logical division of labours among the subprograms listed. The main menu can be reaccessed at any time from within any submenu by the input of the letter "M".

There is a system of error trapping to minimize operator error. Furthermore, there is an editing capability in those subprograms which require the input of data. And at any time, the input of data can be abandoned by typing "END" at a prompt.

Once the program is installed and the procedure codes entered, the insurance company list entered, and the current patients registered, the sequence of events in normal operation is as follows: the patient enters the practice, his account can be accessed either by a printed list of numbers or by means of the program itself, and his account history may be reviewed if desired by requesting a patient "master" report. He receives treatment by the doctor or other provider, the charges and payment are entered into an existing transactions case or a new case (see later), and the items automatically posted. The patient can immediately be given a case printout or statement and a printed insurance form.

Alternatively, a batch method can be used, whereby all transactions are entered at the end of the day or the next morning. In the latter situation, the case printouts, statements and insurance forms are mailed to the patient.

By virtue of the input of the foregoing data, the daily journals, patient ledgers and management reports can all be generated.

As previously noted[1], the Univair program provides the practice with a daily journal (daysheet), an aged accounts receivable report, detailed patient statements, and insurance statements (see later). It will allow the user to input fee codes, English (or French) descriptions of the treatments to which the fee codes refer, plus the intended fees themselves, the latter items to be generated, within the transactions subprogram ("daily processing update") simply by the input of the fee codes. Patient lists and labels can be printed and many practice management reports can be generated.

Account Numbers

The account number is five digits in length, to which is appended a one-to-two digit prefix for the attending dentist, and a one digit suffix for the family member designation, bringing the overall number length to eight digits, being cumbersome to handle. The basic five-digit number can be assigned within the program by a number generator, or the user can enter a number himself. Although the manufacturer states that a patient number can be determined within any subprogram by the mere typing of the word "help" or use of the "help" key, in the version evaluated (Version 5.09), this was totally impossible. The author suggests that a printout of the patient listing or labels for a rotary file be made for manual reference, which generally would be quicker, and which in addition would facilitate the cross-reference of preprinted chart numbers.

Procedure Codes

The program will generate, within the transactions mode ("daily processing update"), a description and fee sequence once the fee code is entered. The description and fee may be modified at any time through the procedure codes subprogram, and in any case the fee may be overridden at the time of the transaction entry by entering the desired fee. The program does not permit the use of acronyms or other abbreviated description to cause the fee code to be generated.

Certain procedure codes are utilized for purposes other than the assignment of fees; for instance, when setting up the accounts, three codes are used for the initial entry of past-due patient balances (the latter facilitates the conversion from a manual system).

Only one fee may be assigned to any particular procedure code; hence there cannot be a separate fee schedule for each of two or more dentists.

Patient (Billing) Codes

Patient codes do not play a large part in the Univair program. There are ten account codes, and all are predefined; for example, Code 0 is used for patients to whom to send no statement, Code 1 for those who are not charged interest on overdue balances, Code 2 for those for whom to assess a finance charge, etc. These codes are assigned when the patient account is set up. Other codes are utilized within the administrative "case" to define billing method, for example, cash, 30 days, etc.

Providers are separated in the Univair program without resorting to patient billing codes. Each provider is assigned his own one-to-two digit provider code which in fact becomes part of the patient account number. Thereafter all treatment summaries and reports produced by the program will be allocated by this code. Treatment charges not allocated to a particular dentist may be allocated to the practice as a whole, which is itself assigned a provider number. The separation of provider accounts by the use of a provider number is sometimes more satisfactory than a system which separates provider accounts by a patient billing number. For instance, where the patient is receiving treatment from more than one dentist in the practice, the treatment would clearly be credited to the treating dentist where provider code numbers are used; where patient billing codes are used, further accounting will be necessary to separate the respective provider accounts.

Cases

The Univair program centres round an administrative unit called a "case", which may not be justified for all practices, and which the prospective user should seriously consider. The case serves the practice by the stricter audit control which it offers, but increases to a degree the complexity of the program. The case defines a particular patient coupled with a particular diagnosis and the fees and payments associated with it. For instance, an examination coupled with the ensuing treatment session may be considered a case, the patient's recall examination and resulting treatment may be another case, a particular treatment and payment may be yet another case, and a change of dentist in the practice will give cause for yet another case. The case is assigned a number by a sequential number generator, and all charges and payments and account queries will be referenced to that case. In consequence, a query on a specific charge or payment involves not only accessing the patient account by its number, but also the case by its respective number.

Hence, a query on an account balance may be made without utilizing a case number, but a query on a particular charge or payment will involve inputting the case number. In this respect, however, all case numbers already assigned to the account can be displayed when the user inquires on the case number after having entered the account number. As a further control on case numbers, they can be indicated on the patient chart, or retrieved from a detailed case or summary case printout.

In the current version of the Univair program, the user can elect to post payments to the account without accessing the case number; however, some of the audit trail will be lost thereby as the accounting method changes from a strict open-item system to a modified balance-forward system. Charges, queries, and editing, however, still require the case number.

Patient Registration

A subprogram entitled "patient administration" permits the entry of patient data. This is the point at which a new patient is assigned a patient number and a dentist number. Prompts request the usual information such as address, employer, primary insurance carrier (the secondary insurance carrier is input in the transactions subprogram) and vital statistics. Only one telephone number per patient may be entered (a business number cannot be input). The user is prompted for the number of dependents, and once a non-zero number is entered into the system, the user is prompted for the name, age and gender of the dependents one at a time. Hence, the guarantor is always entered into the system prior to the entry of a new patient; it is he who will receive the statement of account for himself and all of his dependents.

A printout may be had of all the patients registered into the program, either by number or by alphabet.

Insurance Companies

The user will enter a list of insurance companies, of which each will be assigned a number by the system to be used when registering the patient. One does not have to predetermine the number of insurance companies to be used, as the number already allocated by the Univair program is more than sufficient. In the transactions mode, it is in fact an insurance company code number which is entered for insurance payments. For consistency, an "insurance" code number is also assigned for private payments.

A printout of insurance companies may be generated from within the program.

Department Numbers

The program permits the entry of "department" code numbers when registering the dentist and the practice. Department codes allow the configuration of separate profit statements and balance sheets for the practice and for each dentist by means of a general ledger program.

Transactions

As mentioned heretofore, the "case" is the administrative unit around which all transactions must figure. The subprogram "daily processing update" is selected, the account number is entered, and a case number is entered. The attending dentist is entered if different from the one originally assigned to the account. The primary insurance company code, and secondary insurance company if any, is entered at this time, and the department number and billing date are entered as well. Charges are now entered against the patient account by entering the fee code, and payments may be entered by entering the insurance or private payment code. The manner in which this is done is quite functional in that the list of treatments may be input one below the other, so that all of the entries are visible on the screen. Their respective descriptions and fees are generated automatically, and the tooth code and surface are entered at this time as well.

A printed copy can immediately be generated, but it is important to note that this will be a copy of the current case; no data from other cases other than the total account balance will be shown. The same case number may be entered at a later date to input further transactions if desired, or a new case number may be selected.

Insurance Forms

Insurance forms can be printed in batch or for a particular patient. The CDA standard form format and other formats are available at additional charge upon sending a tractor-feed example of the form requested.

Insurance Pretreatment Authorization Forms

Insurance pretreatment authorization forms cannot be generated by this DPM software.

Adjustments to Patient Accounts

Adjustments and writeoffs are effected by the assignment of a procedure code number to this function with the description "Adjustments". This will produce a clear audit trail of all adjustments for later review. The aggregated adjustments figure will have to be reconciled manually to treatment rendered (income) at year-end in order not to overstate income.

Editing and Security

Cases and charges can be edited or deleted at will by using the specific subprograms set up for the purpose. These subprograms are not controlled by password protection. The dentist or business manager should be aware of this vulnerability.

Assignment of Insurance

The Univair program does not contain a method of recording insurance receivables or the treatment billed to a given or all insurance companies. However, by means of the payment (insurance) codes input by the user in the transactions mode, the total receipts from one or all insurance companies may be determined. This is best done through the insurance production report.

Posting of Payments

The individual account must be called up, and payments posted either to the case or to the account itself. There is no mechanism for the batch posting of payments. There is also no mechanism for posting negative personal payments for dishonoured cheques to the account itself; this must be posted to a case.

Patient Ledger

Because of the use of the case as the administrative unit of this software, in order to view what typically would be the patient ledger, the user must view either a report of cases assigned to a particular account (containing a summary only of charges, payments and balances for the particular cases listed), or otherwise a report of the individual cases itemizing each charge and payment. Therefore, the user should predetermine, if he can, whether he needs to make an account query or a case query and access the particular subprogram concerned. The user cannot view the account and case detail together.

Patient Statements

The monthly statement, generated for the guarantor, clearly indicates all current cases and all cases for which there is an overdue balance, and this is done by dependent. Detail of individual charges and payments within each case is available here. In most respects, the statement is satisfactory. A set of five billing messages can be predetermined for each aging category of the account balance, and printed on the statement. The statement is self-standing, not requiring a preprinted form.

Recall system

There is no recall system in the present version. The date-of-last-visit report can be utilized to generate a recall list. With the latter report, however, patients will be accessed for recall at a predetermined period of time following last treatment or payment entry rather than following last recall examination. These two differ by the time required to effect a sequence of treatment sessions. Further, if a patient should present to the office sometime after a sequence of treatments has been performed, his recall will be even further delayed. On the other hand, there is less chance of patient "drop-out" when using the date-of-last-visit report to generate recalls.

Contract (Budget) Plans

There is no facility for the creation of budget plans.

Finance Charges

Finance charges are easy to configure and are generated automatically at month-end processing; the interest rate for balances less than $500 can be different from that for balances greater than $500. Furthermore, a flat overdue charge can be assessed

instead of the finance charge. Patients to be excluded from such charges will have been so indicated by patient code (see above).

Daily Journal (Daysheet)

The daily journal consists of a charge register and a payments register. In the charge register, each treatment is indicated, along with its code, charge and the case number concerned. There is no description of the treatment rendered nor is the patient name indicated. Although the patient name can be determined from the case number or from another primary source, it would be helpful if this were included in the daysheet. In the payments register, each payment is indicated, along with the case number concerned.

Aged Accounts Receivable Report

The aged accounts receivable report gives current and past-due receivables. The patient number and name is given and would be completely satisfactory if the patient telephone number (preferably two numbers) were also given.

Practice Analysis Reports

The practice analysis reports are excellent. They will give a production report by dentist, payments by insurance company and private payment, and production by procedure code, for any requested range of dates.

Case History Memos

Medical and dental history and comments may be input to the program, and this information will be displayed upon use of the patient case history subprogram. This is a nebulous facility because of the time required to access the subprogram and because the information is unavailable except as a distinct report.

Date of Last Visit Report and New Patient Report

The date-of-last-visit report can be generated using the program's limited database subprogram (see above). A report on new patients is not available.

Appointment Scheduling

An appointment scheduling subprogram will also print schedule sheets for treatment-room posting and route slips (which are blank patient statements) for audit control.

Documentation

The documentation is adequate. An index to the manual would be helpful to the user.

Installation of the Program

There is an installation program to facilitate the configuration of the software to the user's particular hardware. A large selection of hardware is accepted.

Database

There is a limited database subprogram which will sort patient data according to the following fields: attending dentist, patient name, patient address, account number, telephone number, primary insurance carrier, patient billing code, account balance, patient gender, birthdate, and date of last visit. A report or printed labels will be generated on demand with the sorted information.

Month-End Processing

The month-end subprogram will delete paid-out cases, removes deleted records, calculates interest charges, and ages balance-forward accounts. All payment detail is removed during month-end processing, so that payments are aggregated.

Interface with General Ledger

The Univair DPM program interfaces with a general ledger package also made by Univair. The use of "department" numbers when registering the providers and practice facilitate segregation of the dentist and practice financial statements from those of other enterprises.

Audit Trail

The tracing of charges through to their complete payment is facilitated in this software by two mechanisms: by the open-item method of accounting, and by the obligatory use of the case. Use of a procedure code for adjustments will also aid in the audit trail. Where the audit trail fails considerably is in the loss of payment detail in previous billing cycles; this prevents access to payment information in case of patient inquiry and makes difficult the separation of payment information where the practice accepts assignment of insurance policy benefits on behalf of its patient.

General

There are many defaults within the system to make operator entering of data easier; for example, when entering a new case, the date, dentist, and insurance company code and name will default to the data entered within the patient registration subprogram. There is also a system of error trapping such that alphabetic characters generally cannot be entered where numerals are required, invalid date sequence cannot be used, account numbers will not be duplicated, etc.

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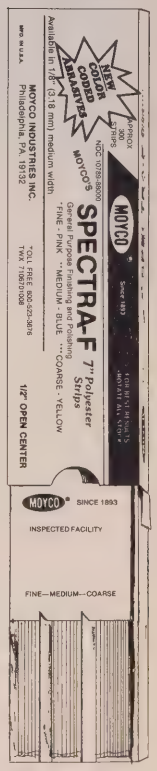

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BE PREPARED
FOR MEDICAL EMERGENCIES IN THE DENTAL OFFICE

Dr. Stephen Zweig
Dr. Marvin Kay
Bramalea, Ontario

DISCUSSION

ALARM! The unexpected, but pre-arranged, emergency signal sounded throughout the suite. The patient in Operatory 2 had become unconscious. A swift, but orderly sequence of events began to take place. Each member of the staff carried out duties which had been well-learned during periodic drills. The neighbouring physician rendered additional assistance until the ambulance transported the patient to the hospital where he is now recovering fully.

Why was this emergency handled so smoothly and without panic? Because some months ago we reviewed all the current literature which we could find on Medical Emergencies in the Dental Office. From that we developed a protocol, our practical approach for the handling of any medical emergency in the dental office. From the plethora of literature pertaining to those emergencies, we culled a handful of outstanding articles from which we developed an effective guide for our office.

As a first step, our entire office personnel took an intensive CPR (CardioPulmonary Resuscitation) course. We obtained a listing of the courses available in our area from the provincial Heart Association.

From Mosby[1] we developed a series of 3×5 file cards listing common emergencies, including signs, symptoms and treatment. These cards are now located in a red file box on our emergency tray. Lubar[2] suggests an alternative. His article contains two excellent 'tear out' pages which can be removed and posted conspicuously in critical areas of the office.

Our emergency tray was designed as described by Kryshtalskyj[3], et al. Another good approach to an emergency cart can be found in the article by Alexander[4].

The next thing we did was approach our three closest neighbouring medical doctors to obtain their consent to be called in the event of an emergency in our office. We also established personal rapport with our local hospital's emergency department.

A complete list of steps to be taken by each staff member in a crisis situation was drawn up with the aid of the article by Gobetti[5] and is posted at several well-known stations throughout the office. Taped to each telephone in the office are the numbers for the local ambulance, the hospital emergency department, and the three co-operating physicians.

A daily check of the oxygen supply is one of the duties of our chairside assistant. If oxygen is not presently available in your office, a simple tank and mask combination is available from dealers listed under 'Oxygen Therapy' in the yellow pages of your telephone directory.

To help us understand the medications (and their side effects) that many of our patients are taking, we purchased the latest blue CPS book[6]. This Compendium of Pharmaceuticals and Specialties is available from the Canadian Pharmaceutical Association, 1815 Alta Vista Drive, Suite 101, Ottawa, Ontario, Canada, K1G 3Y6. You can telephone them at (613) 523-7877.

To bring all of the above together and make it work, frequent drills are scheduled. In our office, these drills are held on the first Tuesday of each month during extended lunch breaks.

Maitland[7] reminded us of the necessity of taking a good history. Its importance cannot be overemphasized. In addition to our usual pre-examination form which the patient completes, we now personally ask many medical questions listed on another form. We always take and record the patient's blood pressure and pulse at the new patient examination. ''Never treat a stranger''.

Several excellent articles which we found to be very helpful, in addition to the ones referred to above, are listed in the bibliography. All these and other references are available at No Charge to members of the Canadian Dental Association, from their Resource Centre, 1815 Alta Vista Drive, Ottawa, Ontario, Canada, K1G 3Y6, telephone (613) 523-1770.

The authors have endeavored to provide the reader with a brief and pertinent approach to help prepare for real emergencies. ''These close encounters of the worst kind'' need not be nightmares in the life of an office staff, providing some forethought is employed, and personnel are properly trained (and rehearsed) in the fundamentals[4].

Dr. Stephen Zweig practises family dentistry in Bramalea, Ontario. A large number of his patients are referred to him for dental treatment under general anaesthesia.

Dr. Marvin Kay is a medical practitioner who limits his practice to the administration of general anaesthesia in the dental office. He and Dr. Zweig have practised together in this field for nearly 20 years.

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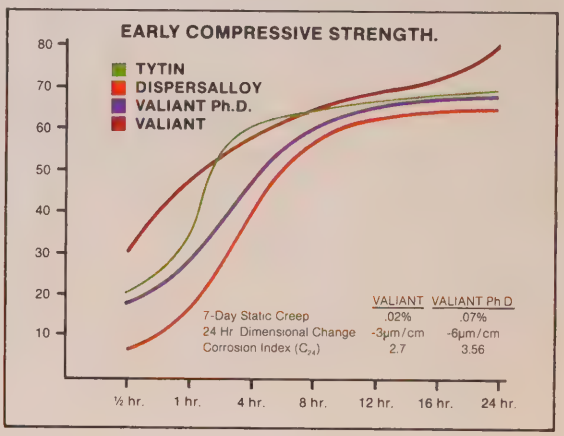

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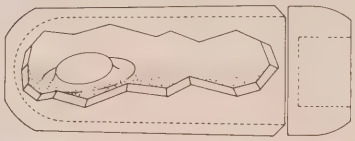

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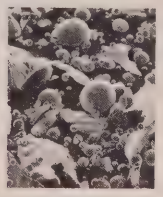

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HOW TO SURVIVE A SEMINAR

Ned Paige, OD
Deborah Golledge, DC, DT
Zoltan Rona, MD

INTRODUCTION

Are you dreading your next seminar? No need to. When you finish reading this you will have become not only a seminar survivor, but a source of wonder and knowledge to your fellow "seminarians."

It is impossible to be a business or professional person these days without attending seminars from time to time. From the point of view of physical/mental well being, this may not be a problem when the seminar is short, say one day, but it it far more serious when the seminar is lengthier.

The stress occasioned by the need to sit still for hours at a time, day after day, is a very unfortunate situation for any human being. In addition, the enforced immobility may produce such symptoms as sleepiness, leg cramps, indigestion, headaches and anxiety, which leads to the inability to comprehend the subject being dealt with. This defeats the very purpose of attending the seminar in the first place.

Unless you are lecturing you must sit at a seminar. That's a shame. Because structurally, your pelvis is probably in its most unstable position when you sit. The lower portion of the pelvic bones move closer together and allow the upper joints to move apart. Thus your lower spine loses its usual support. And this is even further aggravated when you cross your legs. Aside from instability, the spine now has the added stress of weight imbalance.

Muscle spasm is another problem associated with prolonged sitting. The most common area of pain is the gluteals, (what you sit on), but the leg-crosser adds the

discomfort of pain in the lower of the two thighs, which is the result of pressure exerted on the area interfering with local circulation.

Fortunately, a number of simple remedies are available, which help counter the vicious spiral of "Sedentary Seminar Suffering Syndrome." Here is what you can do to avoid the nasty "S.S.S.S."

Wake Up with Deep Breathing

Employing an old karate gambit, you can raise your level of alertness by taking six or seven deep breaths. Breathe in slowly, as deeply as you can. Follow by breathing out, *exhausting as much air from your lungs as possible*. Out with the old, in with the new. An instant pick-me-up!

Lower Your Blood Pressure

You can avoid or relieve leg cramps and improve your alertness with a very short, easy isometric exercise. Simply tighten as many of your body muscles as you can – legs, buttocks, torso, arms and neck, for six seconds. Relax for a few seconds and repeat twice. This exercise carried out only three times daily will improve your circulation and has been shown to substantially lower blood pressure. Best of all, the exercise can be carried out as easily during the lecture as your deep breathing.

Avoid Back and Leg Pains

When sitting, your staying power is only as good as your posture. Put both of your feet on the floor uncrossed. The ideal position is your back right against the back of a firm, straight chair with your knees slightly higher than your hips. A briefcase comes in handy here as a make-shift footstool. The ideal angle of the back is 110° for the normally mobile back and 100° for anyone with restricted mobility.

Perk up Your Nutrition

Your brain's primary source of fuel is blood glucose. Hypoglycemia (low blood sugar) may make you feel dull, tired, anxious, irritable and depressed. Who needs that? Try to cut down on the following foods at least 72 hours before seminar time: coffee, tea, alcohol, sugar, white flour products and drugs containing caffeine. If you like, have an extra drink *after* the seminar to celebrate how well and alert you felt *during* the seminar. Avoid concentrated sources of sugar (soft drinks, candy bars, gum, muffins etc.) These all produce rapid rises in blood glucose, but within a short time (from minutes to a few hours) cause

a nasty rebound effect due to low blood glucose through the action of insulin.

On the positive side, before and during the seminar, you should eat plenty of whole grains, fruits, vegetables, seeds and nuts. These unrefined foods supply a steady flow of time-released glucose to the brain. Carry seeds and nuts in your pockets and snack on them from time to time. Aside from being an excellent source of trace minerals and essential fatty acids, these are foods that will provide a stable blood glucose level.

You can also help avoid the "Seminar Blues", by supplementing with some vitamin "B" complex (50-100 mgs. daily), and vitamin "C" (500-1500 mgs. daily). These aid in the more efficient metabolism of carbohydrates.

If these simple measures fail to help your concentration, stamina, and enthusiasm for the seminar, one of two things may be responsible:

(1) The seminar is a dud. Either you already know the material presented, or the lecturer is "borrring!".

(2) You are out of shape and in urgent need of a thorough biochemical–nutritional evaluation and assessment for an exercise program. In other words, you may need a visit to a nutrition oriented physician and perhaps some aerobic exercise. Also better check your eyes if it's been over a year since your last check-up. Eyestrain can put you to sleep too.

A knowledge of the factors that enable you to get the most out of your seminars and come out feeling on top will really pay high dividends at your next seminar. Enjoy.

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AN OMISSION

The Journal inadvertantly left out the References to Dr. J.H. Gryfe's article "Extracting Dentistry from the Postal Services", which appeared in the December 1984 issue. The references are printed here, with apologies to Dr. Gryfe.

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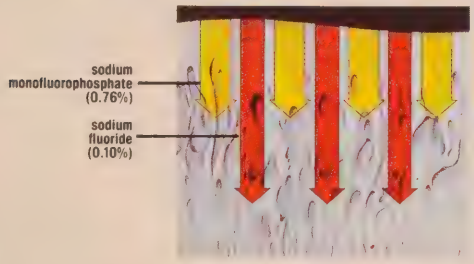
Today's Colgate is the first toothpaste with two fluorides—sodium monofluorophosphate at 0.76% and sodium fluoride at 0.10%. Their differing molecular structures mean that these fluorides may work in different ways in tooth enamel. The result at these concentrations, is more complete remineralization of white spot lesions than either can achieve alone.

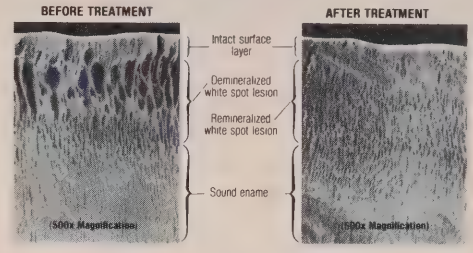
Why these two fluorides remineralize more completely.

It has been postulated that fluorides reach white spot lesions by penetrating enamel through the interprismatic spaces. Sodium monofluorophosphate, being a larger molecule, reacts with enamel primarily at the surface of a white spot lesion. Sodium fluoride, a smaller molecule, penetrates deeper into the lesion.



Working at different levels, the two fluorides may complement each other, enhancing remineralization over a greater area of the lesion than a single fluoride* alone.

This complementary action means more fluoride is available to enhance remineralization over a greater depth of the lesion than is provided by either fluoride alone.[5,6]



This more complete remineralization has been demonstrated in laboratory studies,[7] and can be seen in the photomicrographs above.

Clinical studies show nearly double the cavity reduction.

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*Sodium monofluorophosphate (0.76%)

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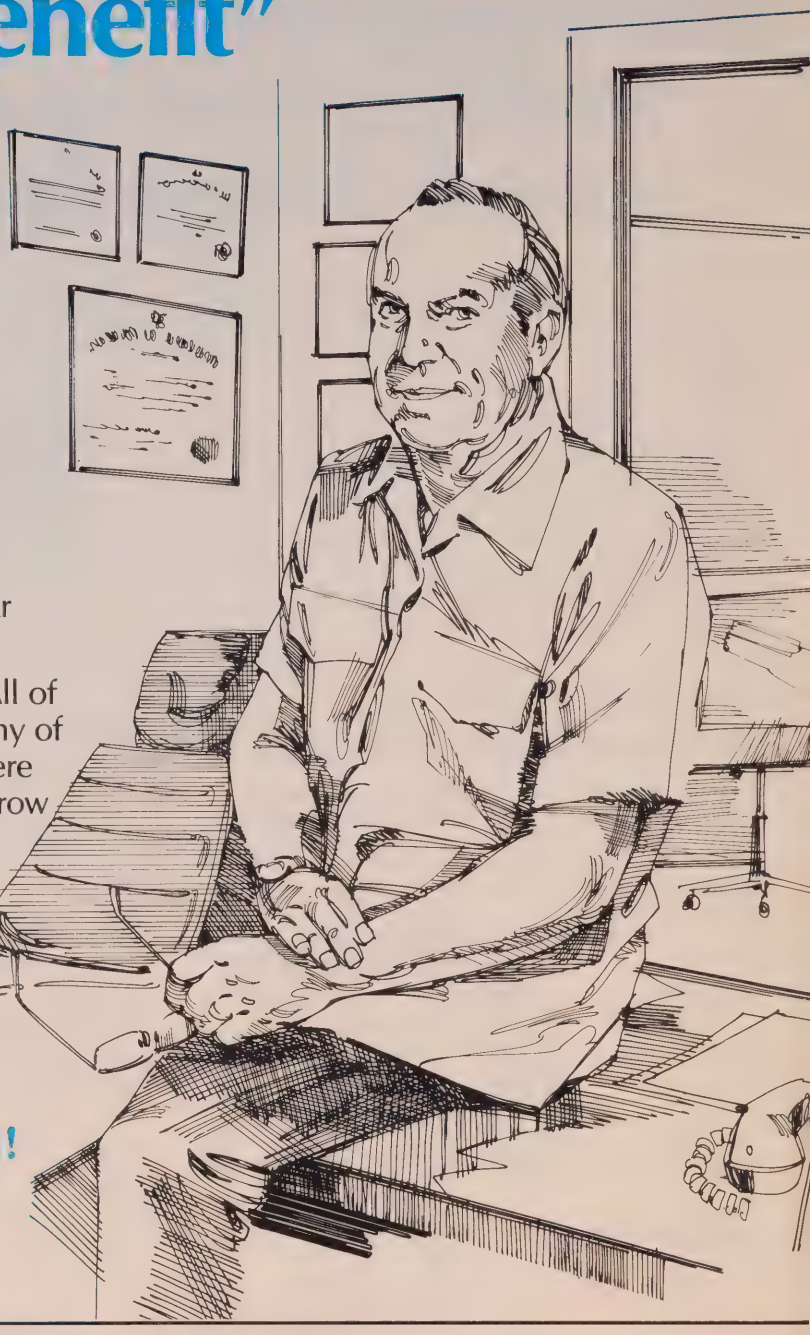

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THE ACID-ETCH BRIDGE

SUBSEQUENT TO THE EXTRACTION OF A TRAUMATIZED MAXILLARY PERMANENT INCISOR

Keith R. Morley, CD, BSc, DMD, FRCD(C)
Lawrence C.R. St. Pierre, CD, DDS
Borden, Ontario

ABSTRACT

A literature review and case report for this procedure was published previously in the JCDA.[1] This article describes the laboratory technique for the case.

K.B., a 13-year-old caucasian female, was referred to the dental clinic at Canadian Forces Base Borden to have a maxillary right central incisor extracted and an acid-etch bridge placed. Her medical history was non-contributory.

SOMMAIRE

Le Journal de l'ADC a déjà publié un compte rendu sur les publications et une histoire de cas touchant cette procédure. Dans cet article-ci, il est question de la technique de laboratoire utilisée pour le cas.

K.B., une Caucasienne âgée de 13 ans, a été adressée à la clinique dentaire de la Base des Forces armées canadiennes à Borden afin de se faire extraire l'incisive centrale droite supérieure et de se faire poser un pont gravé à l'acide. Son histoire médicale n'a pas été utile.

TECHNIQUES

Shade Selection

To aid in shade selection, a piece of lead foil from a used intra-oral radiograph packet was tightly adapted to the lingual surface of the proposed abutments (**Fig. 1**). This foil decreases the light transmission through the abutments and approximates the light-blocking effect of the metal lingual retainer on the finalized bridge.

Impression Techniques

A high quality, fast setting alginate material* was forcefully buttered onto the

Fig. 1. Adaptation of lead foil to lingual surfaces of abutments.

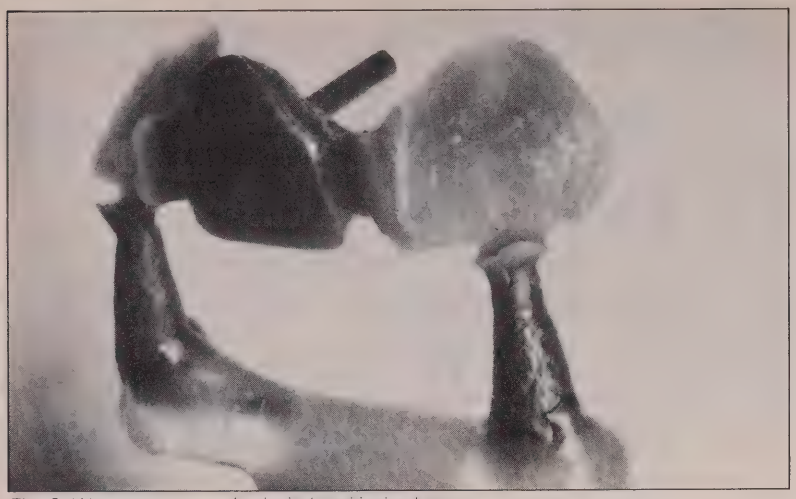

Fig. 2. Wax pattern sprued at incisal positioning lugs.

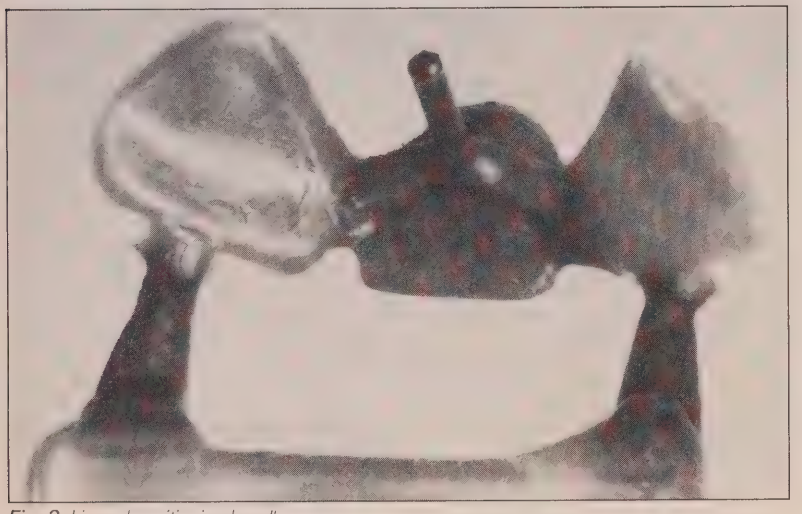

Fig. 3. Lingual positioning handle.

Fig. 4. Handle bent out of occlusion for try-in.

prepared abutments with a finger, before the stock tray and impression material were inserted. After full-time allotment for setting, the impression was removed with a quick snap, rinsed and poured immediately in die stone.**

Wax Pattern

When forming the incisal positioning lugs, the laboratory technician must be directed to extend the wax pattern 1.0 mm in width along the incisal edge just to the labial surface (**Fig. 2**). The wax must be kept as thin as possible to facilitate easy removal after insertion, yet sufficient thickness must be incorporated to avoid distortion. These incisal positioning lugs are convenient places to sprue the framework.

A lingual positioning handle is fabricated from a 20 gauge round wax form (**Fig. 3**). The handle must not interfere with the occlusion and should extend from the pontic, as illustrated in **Fig. 4**. This handle can be used by the dental laboratory ceramist to grip the delicate prosthesis while condensing porcelain. During firing, it rests in a hollow sagger cone.*** (**Fig. 5**).

Chairside Customization and Try-in

The prosthesis can be accurately positioned in the patient's mouth utilizing the handle and lugs. The lugs must be properly designed so as not to interfere with the occlusion. If necessary, chairside custom staining and glazing should be initiated at this time. The glaze is broken with a fine diamond and any necessary re-contouring completed. The prosthesis is now ready to be custom stained. The appropriate pigments are spread onto the pontic using the glazing medium until the desired effect is achieved. Once the staining is finalized, the bridge is transferred to the glazing oven by utilizing the handle. The hollow sagger cone allows the porcelain to remain safely and securely out of contact with the tray. Firing to a natural glaze is completed following the manufacturer's recommendations. After controlled cooling, the prosthesis is tried in the mouth and the shade is verified by the patient. When approved, the bridge is returned to the laboratory for etching.

Laboratory Etching

The prosthesis is polished, wax-protected and etched in the laboratory according to techniques suggested by the manufacturer and shown to be effective by Thompson et al.[2] The incisal seating lugs are not etched to facilitate later removal. After the etching

*L.D. Caulk – Jeltrate
**Silky Rock – Whip Mix Corporation.
***Sagger cone by Ney – Barkmeyer.

procedure, the handle is again utilized to prevent accidental contamination of the etched surface during solvent cleaning and microscopic examination.

Final Cementation

The highly polished, etched custom stained and glazed prosthesis must not be tried in again when it is returned from the laboratory, nor should the etched metal surface be touched or contamination and lack of bonding capability will occur. The lingual handle can be securely gripped by using a locking hemostat (**Fig. 6**). The teeth were isolated, cleaned with fluoride-free pumice, etched with acid gel† for one minute, rinsed copiously with water, and air dried. A microfilled resin† was applied to the etched prosthesis and the lingual tooth surfaces. The prosthesis was firmly and accurately seated using the incisal edge lugs.

Once the composite resin is cured, the lingual positioning handle and lugs are ground off using high speed finishing burs, water and high volume suction. A desirable smooth metal surface can be achieved intra-orally with rubber polishing wheels (**Fig. 7**).

CONCLUSION

This article describes a modification to the design of the Maryland Bridge which facilitates laboratory fabrication, clinical intra-oral try-in and chairside customizing procedures, and final cementation.

The lingual positioning handle can be equally useful in posterior Maryland Bridges.

This article reflects the views of the authors only and not necessarily those of the Canadian Forces Dental Services or the Canadian Armed Forces.

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The authors would like to thank **Mr. Eric Fowler** of Central Dental Laboratory, Barrie, Ontario, for technical assistance.

Reprint requests to Lt.-Col. Morley.

Shofu Silocone Finishing Points, Brownie & Geenie.

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‡ Etching gel by Scotchbond – 3M
† Suggested resins: Comspan Scotchbond Opaque, Composite Luting Cement by Caulk.

Fig. 5. Position in hollow sagger cone during firing.

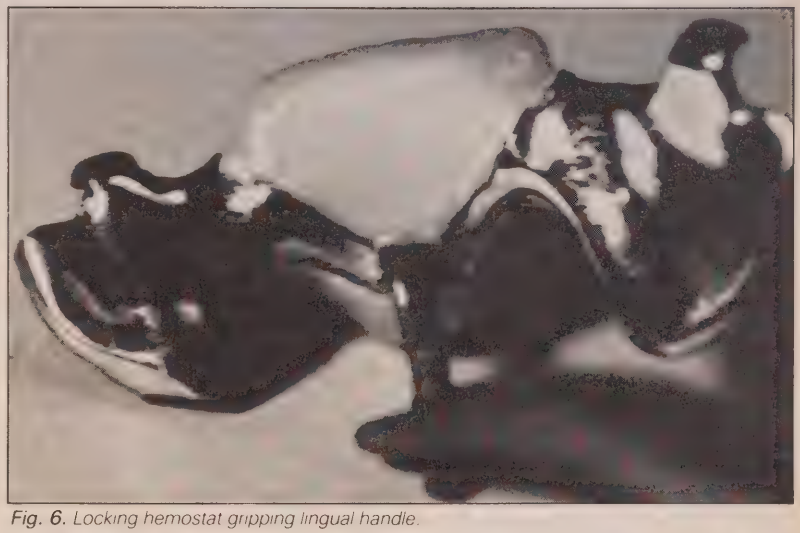

Fig. 6. Locking hemostat gripping lingual handle.

Fig. 7. Mirror view of prosthesis after insertion and metal finishing

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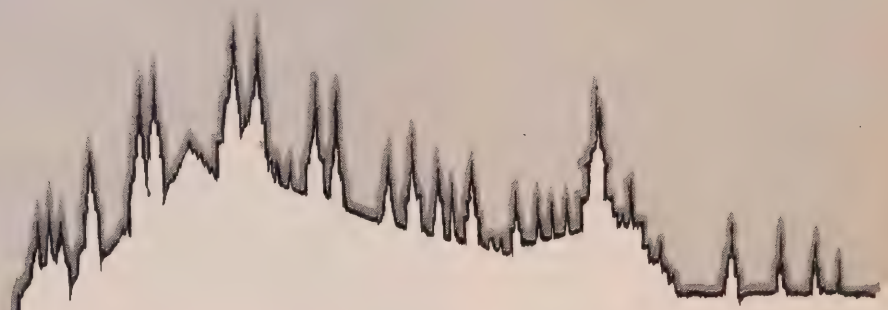

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TREATMENT OF DENTAL CARIES

MONITORED BY MICROBIAL METHODS: REPORT OF TWO CASES

John G. Silver
Vancouver
Bo Krasse
Goteborg, Sweden

ABSTRACT

The application of microbial and salivary analyses as an adjunct to diagnosis of dental caries and subsequent monitoring of treatment effectiveness is reviewed and illustrated by two case reports.

SOMMAIRE

Les analyses microbienne et salivaire peuvent compléter le diagnostic des caries dentaires et aider à déterminer si les traitements ont été efficaces. Cet article résume les données touchant cette méthode et l'illustre au moyen de deux cas.

INTRODUCTION

Microbial and salivary analyses have been shown to be valuable adjuncts in the diagnosis of dental caries activity[1-5] and they can also be used to check the compliance of patients and the effectiveness of caries preventive measures.[6-7] The possibilities of applying microbiological knowledge in dental practice for the treatment and prevention of dental caries have recently been reviewed.[8]

In this paper we present two cases in which the above principles have been applied. In one case, the patient was concerned because of the number of fillings she had had over the years. In the other case there was active, recurrent decay. In neither case had attention been paid previously to treatment of the cause of the disease, although both patients visited their dentists regularly and received symptomatic treatment in the form of restorations.

METHODS

The methods used have been described in detail elsewhere.[4-6,9,10] In brief, they were as follows:

Case history and clinical examination

Details of personal history including age, sex, marital status, number of children, and occupation were obtained. Attitudes to frequency and types of past dental treatment also were determined. The patients' assessment of their own diet was obtained by interview and also by a written food record. This determined types of food groups used and frequency of food intake. Other questions allowed insight into lifestyle stresses, habits (particularly related to diet, smoking and alcohol consumption) as well as oral hygiene practices. The personal history resulted in a composite picture which provided many clues for appropriate approaches to subsequent treatment.

Intra-oral examination included assessment of 1) condition of the mucous membranes (particularly evidence of dry, dull appearance suggestive of reduced salivary secretion rate), 2) caries prevalence, 3) location and appearance of the carious lesions (surfaces involved, degree of softness and pigmentation), 4) amount of plaque, 5) gingival and periodontal status, and 6) quality of previous dental care. The examination was aided by radiographs made available by the patients' dentists.

Salivary and microbial analyses

Saliva samples were obtained two hours after a meal by having the patient chew on a piece of paraffin wax (1.5 g) for 5 minutes. The volume of saliva secreted was measured and the secretion rate expressed in ml per min. The normal secretion rate in adults is 1-2 ml per min.

The buffer capacity of saliva was determined by the method of Ericsson.[11] To

Fig. 1. (Case 1). Extent of previous restorative work.

Fig. 2. (Case 1). Details of caries, decalcifications and restorations.

1 ml of saliva, 3 ml of 0.005 N HC1 was added. In order to eliminate carbon dioxide, the sample was shaken and left standing for 10 min after which the pH was measured. At normal buffer capacity the final pH varies between 5.0 and 7.0 and a pH value below 5.0 indicates a low buffer capacity.

Streptococcus mutans and lactobacilli were enumerated. The saliva was diluted in 10-fold steps with phosphate buffered saline (PBS). With a semi-automatic pipette, aliquots of 25 μl from appropriate dilutions were spotted in duplicate on the surface of Mitis Salivarius Bacitracin (MSB) agar[9], which is selective for *S. mutans*, and on Rogosa selective lactobacillus agar. All plates were incubated at 37°C for 48 hr in a mixture of 5% CO_2 and 95% nitrogen.

Colonies were characterised by specific criteria, counted[12] and the mean value expressed as a number per ml saliva. Results showing numbers $> 10^6$ *s. mutans* and $> 10^5$ lactobacilli per ml saliva can be considered as high values.[4-6]

Dietary analysis

In addition to salivary and microbial tests, dietary analysis was undertaken by means of a three-day written history. Patients were asked to record the nature and quantity of all food and drink intake and the times at which this occurred and to make no exceptions. They were expected to include oral medications, if any, the use of lozenges, ''Life-savers'', etc. Basically they were to write down everything they placed in their mouths. The dietary intake was analysed using the ordinary Four Food-Groups guide (milk and milk products; meat, fish and poultry; fruits and vegetables; bread and cereals).[13]

Treatment

Part of the treatment consisted of dietary counselling. The patients were recommended to eliminate sucrose-containing, between-meals snacks and to avoid foods containing so-called hidden sucrose (e.g., breakfast cereals). Furthermore, fluoride gel and/or chlorhexidine gel was applied in individually designed vinyl applicators. The purpose of the gels was to favour remineralization of the early enamel lesions and to reduce levels of cariogenic bacteria.[10] The fluoride gel contained 1.23 per cent acidulated sodium fluoride monophosphate as its active agent and the chlorhexidine gel, 1 per cent chlorhexidine gluconate. After instruction, the gel treatment was performed at home once a day for five minutes. Treatment periods with the chlorhexidine gel generally were 14 days between subsequent microbial and salivary analyses. Fluoride gel was used for up to four weeks.

The effect of these measures was assessed by repetition of the microbial tests 2-3 days after completion of each treatment period. When counts of the cariogenic organisms had reached consistently low levels, it was possible to reduce or eliminate gel treatment. Patients were advised that continued low sucrose intake would reduce the risk of recurrence of cariogenic microorganisms in high numbers.

CASE 1
Personal History

TN, a 31-year-old female, had two children (aged 3 and 6 years). She was a graduate student in education, having been born in England and now living in Vancouver, B.C. Prior to coming to Vancouver she had lived in a community with fluoridated drinking water for five years. The general medical history was non-contributory and the patient was not taking any medication.

The patient was aware that she had always had cavities and was concerned about the problem of always being in need of fillings, despite brushing her teeth regularly and carefully. She claimed not to eat many sweets. Salivary and microbial tests were undertaken following referral to one of us (BK) when she attended the University of British Columbia Faculty of Dentistry for an examination of her three-year-old son.

Clinical Observations

The patient was of normal height and weight and appeared healthy. Oral examination revealed the mucous membranes to

be normal with no signs of dryness of the mouth. There was excellent gingival health with no gingival inflammation and no bleeding on probing.

Amalgam restorations were present in all remaining premolars and molars. Silicate restorations were present on the proximal surfaces of the maxillary anterior teeth; the mandibular anterior teeth were sound. All second premolars were missing and the patient's DMFT was 22 (1-4-17) with DMFS of 69. The extent of previous dental treatment and dental status at the time of examination is partly shown in **Figures 1 and 2**.

Dietary History

Analysis of the dietary history revealed frequent intake of sucrose. The patient favoured so called "natural" cereals at breakfast and honey in tea on several occasions every day. She was unaware that both "natural" cereals and honey had high sugar contents. In addition the patient had a habit of using chewing gum on a rather frequent basis. No deficiencies were observed regarding the basic food groups.

Laboratory Examinations

At the beginning of the study, the patient's salivary flow rate was normal but the saliva had low buffer capacity (**Table I**). Her *S. mutans* count was high, while the lactobacillus count was low.

Treatment

In view of her high and frequent sugar intake, the patient was counselled to refrain from sugar, honey and sweets for a period of two weeks. Very minor changes were made in other aspects of the diet.

A small reduction in *S. mutans* counts was obtained during the first two weeks but the patient reported restlessness, uneasiness and irritability (suggestive of functional hypoglycemia). In these circumstances, we decided to use chlorhexidine gel during the second two weeks as an adjunct to obtain more rapid reduction of *S. mutans*. During this latter period there was reduction of the previously described symptoms, suggesting that adaptation to reduced sugar intake had occurred.

Following the chlorhexidine gel treatment, a marked reduction in *S. mutans* counts was observed. Consequently, gel application was changed to fluoride for a period of one month. The purpose of the change to fluoride gel was to aid surface remineralization and also to assist in reduction of plaque formation.

CASE 2

Patient history

BT, a 32-year-old male computer operator (shift work), was referred by a private dental practitioner to the University of British Columbia. The referral was based upon recurrent caries problems, the patient presenting with both enamel and root surface carious lesions.

Fig. 3. (Case 2) Extensive restorations, new and recurrent decay

Fig. 4. (Case 2). Amalgam and temporary restorations of various durations.

Although the patient had no major systemic diseases, he complained of some indigestion. He had lived in two other cities prior to moving to Vancouver, one of them providing fluoridated water when he was 7-9 years old. He had visited dentists regularly and was concerned that many restorations were required at each visit.

Clinical observations

The patient had two teeth missing and the remaining teeth exhibited heavy restorations, either of amalgam or temporary zinc oxide/eugenol. Recurrent decay was present around some of the amalgam restorations and root caries was present in many areas. The DMFT score was 24 (14-2-8) with DMFS score 83. The contour of the existing restorations generally was unsatisfactory with poor reproduction of tooth contours and many restorations having defective margins. Many of these clinical features are illustrated in **Figures 3** and **4**.

Dietary history

The patient indicated that he usually had two cooked meals a day and felt that he was careful about sugar intake. He tended to use sugar-free products, particularly sugar-free chewing gum which was consumed on a regular basis. Analysis of the three-day

TABLE I

Results of Salivary and Microbial Analyses Case 1

WEEK		SALIVARY		CFU PER ml SALIVA	
		Secretion rate ml/min	Buffer Capacity pH	*S. mutans* $\times 10^6$	Lactobacilli $\times 10^3$
1		1.5	4.5	2.8	12
	A				
3		1.7	5.7	0.2	80
	B				
5		1.5	5.6	0.02	< 1
	C				
14		–	–	< 0.001	< 1

A. Dietary counselling. Refrain from sucrose.
B. Chlorhexidine gel, 5 min per day for 2 weeks.
C. APF gel.

TABLE II

Results of Salivary and Microbial Analyses Case 2

WEEK		SALIVARY		CFU PER ml SALIVA	
		Secretion rate ml/min	Buffer Capacity pH	*S. mutans* $\times 10^6$	Lactobacilli $\times 10^3$
1		1.5	6.0	32.0	12
	A				
3		–	–	14.0	32
	B				
5		1.6	6.8	1.0	30
	C				
8		–	–	0.008	3
	D				
14		–	–	2.0	4
	E				
16		–	–	0.16	40
	F				
25		–	–	0.015	4

A. Dietary counselling. APF gel.
B. Chlorhexidine gel.
C. Continued use of chlorhexidine gel.
D. Dietary information.
E. New chlorhexidine treatment.
F. Controlled diet with intermittent chlorhexidine gel.

dietary record, however, revealed that sugar intake was far higher than the patient realized. In fact, he consumed five to six cups of coffee with sugar during the day and also drank considerable quantities of Kool-aid (which also contains sugar). In addition to the sugar-free gum, the patient chewed Breathsaver mints on many occasions during the day and again these were found to be high in sugar content.

Laboratory examinations

Initially, salivary and microbial analysis (**Table II**) showed normal salivary secretion rate and buffer capacity, low numbers of lactobacilli but very high numbers of *S. mutans*.

Treatment

The patient was advised that the laboratory tests indicated a high number of *S. mutans* and that this was associated with his high and frequent sucrose consumption. He agreed to refrain from sucrose in his diet and in order to obtain some remineralization of early enamel and root surface caries, he was placed on fluoride gel applications. The dietary counselling and fluoride treatment, however, did not result in a substantial reduction of his *S. mutans* count. In these circumstances the gel application was changed to chlorhexidine but still without notable success.

Rigorous review of the patient's diet indicated that although sugar consumption had been reduced, there was still frequent intake of "sugar-free" products. All of these were found to contain high levels of sorbitol which might have served as a substrate for *S. mutans*.[14] Major efforts, successful to a reasonable degree, were then made to find sugar-free products containing Xylitol, whose cariogenic potential would be far less. Chlorhexidine gel treatment was continued on a daily basis until, by 8 weeks, the *S. mutans* counts had dropped from 1×10^6 to 8×10^3.

Although we were encouraged by these results and passed on this information to the patient, progress continued to be erratic. Six weeks following the initial reduction of *S. mutans* levels, during which period dietary control of sugar intake was the major treatment, *S. mutans* counts again rose to a high level. Once again the necessity for rigid control of sugar intake was emphasized and chlorhexidine gel applications were again implemented on a daily basis. A new reduction of *S. mutans* counts then occurred. Dietary control of sugar intake again became the major therapeutic approach, although this was supplemented by chlorhexidine gel once or twice per week. Patient compliance was considered to be more consistent as further laboratory tests about two months later showed very low levels of *S. mutans*.

The main results of the laboratory tests during the period when this patient was seen are presented in **Table II**.

DISCUSSION

These cases are presented to illustrate the value of monitoring the treatment of dental caries by microbial methods. While both cases had some similarities, especially in the fact that the patients had had frequent visits to dentists and, on those occasions, had required numerous restorations, one patient responded very rapidly to the treatment while the other responded much more slowly. Motivation towards dietary control of sugar and regular use of prescribed gels appeared to account for the differences in response. The observations show the value of the laboratory analysis in assisting with compliance determinations.

In Sweden, the microbiology laboratory in the Faculty of Dentistry of the University of Göteborg undertakes approximately 30,000 such tests per year and is one of four centres in Sweden offering these tests. Not only are the tests used to assist dental practitioners in bringing rampant and/or recurrent caries under control, but are also used to assess levels of cariogenic bacteria prior to treatment plans involving complex crown and bridge procedures. The Swedish authorities consider the use of such examinations so important that patients with appropriately low bacterial counts are refunded 50 per cent of the costs of restorative treatment by the government insurance office.

The Faculty of Dentistry at the University of British Columbia has a microbiology laboratory offering these tests as a service to the dental profession in the province. Samples are sent in a special transport medium provided by the laboratory and are suitable for analysis if received by the

laboratory within 48 hours of being obtained from the patient. In fact, transport medium preserves the viability of most plaque streptococci for several days at room temperature.[12]

Recognizing that symptomatic treatment alone (i.e. removal of caries and placement of restorations) in many patients does not give satisfactory results, we believe that much greater attention should be given to treatment of the causes of dental decay. The effectiveness of that treatment clearly can be monitored by the use of microbial analyses, and such methods have several advantages. The patient can be informed within one month of initial positive results (whether they be from dietary changes alone or in conjunction with the use of gels), whereas observable clinical effects (manifested by reduced caries incidence) may not appear for one year. In addition, the dentist's diagnostic skills are improved, allowing a more rational approach to preventive measures and timing of dental treatment.

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Reprint requests to Dr. Silver.

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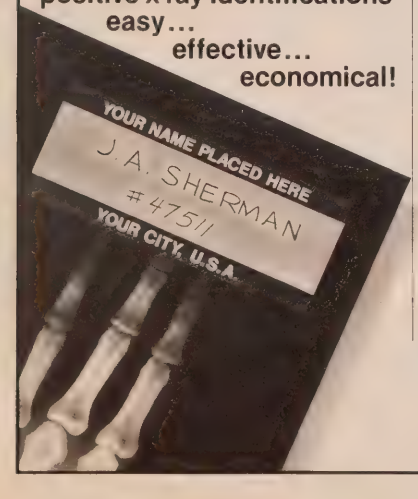

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RÉSUMÉ

Résultats d'une étude conduite au Département de Chirurgie buccale et maxillo-faciale de l'École de médecine dentaire de l'Université Laval sur le contrôle de la douleur post-opératoire employant un nouveau médicament anti-inflammatoire, analgésique non-stéroïdien.

SUMMARY

Flurbiprofen is a potent anti-inflammatory analgesic and antipyretic drug which belongs to the group of propionic acid derivatives. It has been extensively evaluated in the treatment of rheumatoid and osteoarthritis. Preliminary studies indicate effectiveness in the acute inflammatory diseases such as acute gout, bursitis, tendonitis, flares of rheumatoid arthritis and ankylosing spondylitis, and as an analgesic for mild to moderate pain.

The purpose of this double-blind randomized trial was to evaluate the oral analgesic activity of flurbiprofen compared to the standard analgesic A.C.C.-30 and placebo in patients with pain following oral surgery.

It has been demonstrated that the active treatment arms are superior to placebo with respect to pain intensity, degree of relief and the use of supplemental medication. Flurbiprofen performed better than A.C.C.-30 with respect to pain intensity, degree of relief and the use of supplemental medication, achieving significance in several comparisons. On no measure was A.C.C.-30 superior to flurbiprofen.

* La Compagnie Upjohn du Canada, Don Mills, Ontario
Ce medicament sera commercialise sous le nom "Ansaid"

LE FLURBIPROFÈNE EN CHIRURGIE BUCCALE

Tous ceux d'entre nous qui avons à poser des actes qui seront suivis de douleur chez nos patients ambulants avons toujours recherché un analgésique qui soit efficace et permette en même temps à ces patients de vaquer à leurs occupations. La grande majorité des analgésiques que nous employons ont une influence sur le système nerveux central. Voilà un effet pharmacologique que nous cherchons à éviter.

Une étude a donc été conduite, entre novembre 1982 et avril 1983, par la section de chirurgie buccale de l'École de médecine dentaire de l'Université Laval sur 126 patients ayant subi une chirurgie. Cette étude, randomisée, parallèle, à double-insu, visait à évaluer l'effet analgésique d'une dose unique de :

i) Flurbiprofène 50 mgs,
ii) A.C.C.–30 (292), acide acétylsalycilique 375 mgs, phosphate de codéine 30 mgs et citrate de caféine 30 mgs, et
iii) placébo.

Tous les patients prenant part à cette étude devaient avoir subi une chirurgie osseuse, soit ablation de dents incluses, d'exostoses, de tori ou réduction osseuse de tubérosités.

TABLEAU I

Patients

		HOMMES	FEMMES
	NOMBRE	(%)	(%)
Flurbiprofène	41	11 (27)	30 (73)
A.C.C. 30 (292)	40	21 (53)	19 (47)
Placébo	40	21 (53)	19 (47)

TABLEAU II

Âge et poids

	ÂGE		POIDS (KG.)	
	MOYENNE	ÉCART	MOYENNE	ÉCART
Flurbiprofène	28	18-62	62.2	46-146
A.C.C. 30 (292)	27	18-50	65.0	43-87
Placébo	28	19-66	63.5	47-93

TABLEAU III

Douleur initiale – avant absorption du médicament

	NOMBRE DE PATIENTS (%)		
DOULEUR	LÉGÈRE	MOYENNE	SÉVÈRE
Flurbiprofène	6 (15)	19 (46)	16 (39)
A.C.C. 30 (292)	4 (10)	23 (58)	13 (32)
Placébo	6 (15)	19 (48)	15 (37)

TABLEAU IV

Intensité de la douleur vs temps après ingestion du médicament

Temps (heures)	0	1	2	3	4
Flurbiprofène	5.7	4.1	2.1	1.2	1.4
A.C.C. 30 (292)	5.8	4.8	3.5	3.2	2.2
Placébo	5.6	6.2	4.8	3.3	3.0

TABLEAU V

Différence de l'intensité de la douleur vs temps

( ) NOMBRE DE PATIENTS				
Temps (heures)	1	2	3	4
Flurbiprofène	−1.59 (41)	−3.65 (34)	−4.71 (31)	−4.45 (31)
A.C.C. 30 (292)	−1.00 (40)	−2.40 (30)	−2.59 (27)	−3.71 (21)
Placébo	−0.55 (40)	−0.85 (20)	−2.50 (12)	−2.75 (12)

TABLEAU VI

Nombre de patients rapportant un soulagement de bon à excellent

	NOMBRE DE PATIENTS (%)	
	APRÈS UNE HEURE	AU MOINS UNE FOIS
Flurbiprofène	20 (48.8)	31 (75.6)
A.C.C. 30 (292)	15 (37.5)	24 (60.0)
Placébo	2 (5.0)	9 (22.5)

TABLEAU VII

Effets secondaires

PATIENT No:	MÉDICAMENT	EFFET	INTENSITÉ	RELATION
16	A.C.C. 30 (292)	céphalée	légère	sans relation
18	A.C.C. 30 (292)	brûlement d'estomac	légère	sans relation
26	A.C.C. 30 (292)	céphalée	sévère	possibilité
34	A.C.C. 30 (292)	engourdissement des membres – fièvre	légère	possibilité
49	Placébo	étourdissement	légère	probablement sans relation
53	A.C.C. 30 (292)	céphalée	modérée	sans relation
56	Flurbiprofène	léthargie	légère	sans relation
61	Placébo	céphalée	légère	sans relation
70	Flurbiprofène	léthargie céphalée	légère	possibilité
74	Flurbiprofène	léthargie	modérée	probablement reliée

Les effets secondaires rapportés et leur relation au médicament absorbé furent appréciés par l'investigateur et le patient au moment de la visite de contrôle.

TABLEAU VIII

Médicament secours

	NOMBRE DE PATIENTS (%) AYANT EMPLOYÉ LE MÉDICAMENT SECOURS			
Intervalle	1-2 hrs	1-3 hrs	1-4 hrs	1-8 hrs
Flurbiprofène	8 (19.5)	10 (24.4)	10 (24.4)	17 (41.5)
A.C.C. 30 (292)	11 (27.5)	16 (40.0)	19 (47.5)	26 (65.0)
Placébo	22 (55.0)	28 (70.0)	28 (70.0)	33 (82.5)

Toutes des chirurgies nécessitant l'élévation d'un lambeau mucopériosté et ablation d'os. Donc douleur post-opératoire anticipée de moyenne à sévère.

CRITÈRES DE SÉLECTION

(a) Critère d'admission

(i) hommes et femmes entre 18 et 70 ans

(ii) chirurgie nécessaire pour exérèse de dent(s) incluse(s), chirurgie pour exostoses ou préprothétique

(iii) patients pouvant communiquer comme il faut avec le personnel en charge de l'étude

(iv) patients habitant à une distance raisonnable du bureau de l'investigateur et pour qui la visite de surveillance n'est pas un déplacement majeur

(v) la participation à cette étude est purement volontaire. L'investigateur renseignera les patients sur les objectifs de l'étude et répondra aux question qu'ils pourraient lui poser.

(b) Critères d'exclusion

(i) personnes de moins de 18 ans et de plus de 70 ans

(ii) femmes enceintes et celles qui, à l'interrogatoire, admettent la possibilité d'une grossesse non confirmée

(iii) maladie grave du système cardiovasculaire, des reins ou du foie (les diabétiques et les hypertendus dont l'état est bien contrôlé sont admissibles)

(iv) antécédents d'ulcères, d'hypersensibilité à l'un des médicaments à l'essai et antécédents de bronchospasme dû à l'acide acétylsalicylique et à d'autres agents anti-inflammatoires non stéroïdes

(v) impossibilité de prendre la médication orale

(vi) impossibilité de communiquer comme il faut avec le personnel en charge de l'étude

(vii) patients prenant déjà, *régulièrement*, des analgésiques, des médicaments agissant sur le SNC ou des anti-inflammatoires, y compris des stéroïdes (soit ceux souffrant de polyarthrite rhumatoïde ou d'ostéo-arthrite)

(viii) ceux qui, selon l'investigateur, nécessiteront une sédation profonde ou une anesthésie générale

(ix) ceux qui ne recevront pas un anesthésique local courant

L'anesthésique employé pour tous les patients était Octocaïne 2 pour cent, 1:100,000 épinephrine.*

Chaque patient recevait en outre, après sa chirurgie, pour supplémenter son alimentation, des puddings et sachets de Méritène.**

L'évaluation des médicaments à l'essai devait durer un maximum de quatre heures après la prise d'une seule dose. Et puisque les procédures chirurgicales effectuées chez ces patients devaient éliciter une douleur post-opératoire importante, chacun d'entre eux recevait, comme médicament secours, une enveloppe contenant du Fiorinal C¼.***

Tous les patients participant devaient être revus pour contrôle et évaluation entre quatre à sept jours après la chirurgie.

Le Flurbiprofène est un analgésique à action anti-inflammatoire et anti-pyrétique puissante. C'est un dérivé de l'acide propionique dont l'activité a fait l'objet de nombreuse études dans le traitement de la polyarthrite rhumatoïde et de l'ostéo-arthrite. Les études préliminaires indiquent qu'il est efficace dans les maladies inflammatoires aigües comme l'accès de goutte, de bursite, de tendinite, les poussées de polyarthrite rhumatoïde et de spondylarthrite ankylosante et comme analgésique pour soulager la douleur d'intensité légère à modérée. D'après les études de tolérance effectuées chez l'homme et ayant duré jusqu'à six mois, le principal effet secondaire est l'irritation des voies gastro-intestinales supérieures. Lors d'études prolongées effectuées chez le rat avec de fortes doses, il y a eu des lésions de papilles rénales.

*Anesthésique gracieusement fourni par la Compagnie Novocol, Cambridge, Ontario.
**Compliment de la Compagnie pharmaceutique Doyle.
***Compagnie Sandoz

Résultats

Des 126 patients ayant participé à la recherche, cinq ne purent être évalués :
– trois ne rapportèrent pas de douleur (?)
– deux ne remplirent pas le questionnaire correctement.

Les statistiques des 121 autres patients se retrouvent dans les tableaux qui suivent. Il n'y eut pas de différence statistiquement valable entre les trois groupes en ce qui concerne le poids, l'âge, le temps entre la chirurgie et l'absorption du médicament de même que l'intensité initiale de la douleur.

Il y eut cependant une diminution de l'intensité de la douleur, au fur et à mesure que passait le temps, chez les trois groupes de patients, soit ceux ayant pris le Flurbiprofène, le 292, de même que Placébo. À la troisième heure post-ingestion la diminution de la douleur du groupe Flurbiprofène était supérieure à celle des deux autres groupes.

L'intensité de la douleur était quantifiée par le patient sur une échelle de 0 à 9. Zéro = pas de douleur, 1, 2, 3 : douleur légère, 4, 5, 6 : douleur modérée et 7, 8, 9 : douleur sévère. Il est bien certain que le seuil de la douleur varie d'une personne à l'autre, mais à défaut d'une meilleure méthode, celle-ci est considérée statistiquement valable pour un échantillon considérable de patients.

Des réactions secondaires furent rapportés par 10 patients, cinq ayant pris le 292, trois le Flurbiprofène et deux le Placébo. Ces effets secondaires ne nécessitèrent aucune action thérapeutique et disparurent avec le passage du temps.

Les tableaux qui suivent démontrent que le Flurbiprofène a été supérieur au placébo et au 292 pour les paramètres tels la réduction de la douleur et le nombre de patients devant recourir au médicament secours.

Ce nouvel analgésique anti-inflammatoire, sans effet sur le système nerveux central, sera sans doute d'une grande utilité pour le contrôle de la douleur chez nos patients lorsqu'il s'avère nécessaire de prescrire un tel médicament.

L'auteur tient à remercier **mesdames Muriel Bédard** et **Francine Alexandre** sans qui il aurait été impossible d'entreprendre et mener à terme une telle recherche clinique.

Merci également à monsieur **Pierre Y. Lambert**, Associé en recherche clinique, de la Compagnie Upjohn, pour sa coopération à l'élaboration du projet et son support constant.

Pour ce qui est des statistiques, elles peuvent être obtenues en s'adressant à la Compagnie Upjohn.

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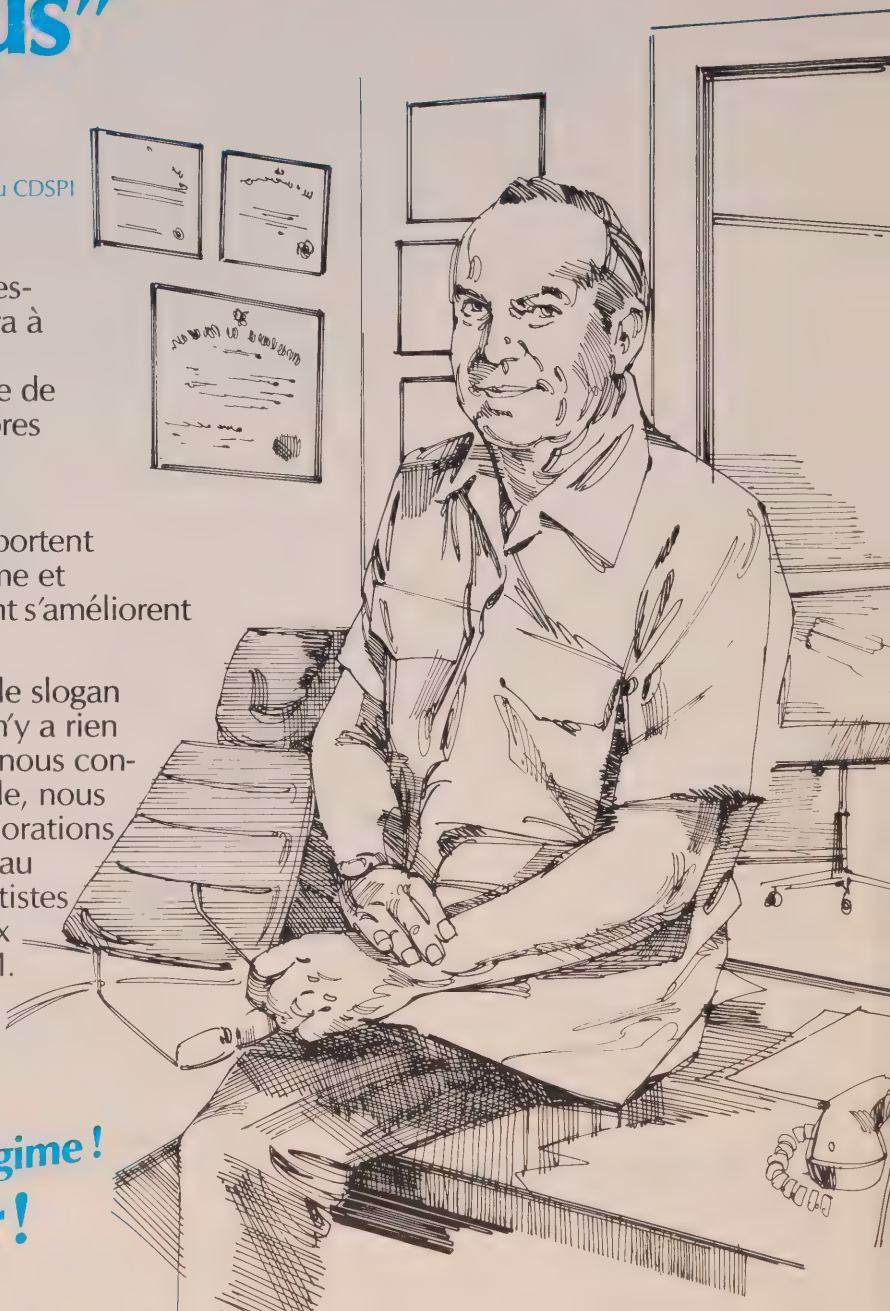

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POLYMERIZATION

ABILITY OF 15 VISIBLE LIGHT CURING GENERATORS

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ABSTRACT

The introduction of visible light cured composite resins has ushered in a new era in operative dentistry. These resins present an improvement over previous systems. They are safer and easier to use than the u.v. activated composite resin systems.[1] In addition, the mixing procedure necessary with the self curing resins may entrap air bubbles, which produce porosities in the final restoration,[2,3] and the amine initiator responsible for color instability has also been replaced.[1-4] Finally, the more complete surface polymerization possible with these systems leads to better wear resistance.[5,6] These factors alone are, in our opinion, sufficient to justify the use of visible light activated resin systems.

SOMMAIRE

En dentisterie opératoire, l'introduction de résines composites polymérisées à la lumière visible marque le début d'une ère nouvelle. Ces résines constituent une amélioration sur celles qu'on utilisait auparavant. Elles sont plus sûres et plus faciles à utiliser que les résines composites polymérisées à l'ultraviolet.[1] De plus, avec les résines autopolymérisantes, des bulles peuvent se former lors du mélange, entraînant des porosités dans la restauration définitive.[2,3] Par ailleurs, on a remplacé l'agent aminé responsable de l'instabilité de la couleur.[1-4] Enfin, la nouvelle méthode permet une polymérisation de surface plus complète, ce qui augmente la résistance à l'usure.[5,6] À notre avis, ces seuls facteurs suffisent pour justifier l'utilisation des résines polymérisées à la lumière visible.

The photo-cured resin process has been well documented. In contrast, the influence of manipulative variables, such as the visible light generator, on the quality of polymerization still needs documentation. For example, if exposure time itself is considered, on one hand there are manufacturers' recommendations, mostly concerning the depth of cure of composite resins rather than the quality of cure or the importance of the light generators. (Depth of cure refers to the depth at which the polymerization can be activated, while quality of cure refers to the completeness of polymerization at different depths.) On the other hand, studies have been published on the depth of cure and the quality of cure of these resins.[7-12] The need to investigate the curing ability of the increasing number of different commercially available light curing generators is timely.

MATERIALS AND METHODS

Fifteen new commercially available visible light curing generators were selected as test materials. The study method compared the degree of polymerization of Prisma-Fil* composite resin (Knoop hardness measurements) at both the top and bottom surfaces of the specimens, using light exposure time periods of 10, 20, and 30 seconds.

A brass mold (**Fig. 1**) was used to shape the composite resin in the form of a disk 5 mm in diameter and 3 mm in depth. A 5 mm diameter was selected to allow all endpiece tips of the light generators to completely cover the samples.[13] The mold was filled with Prisma-Fil composite resin, which was pressed between glass plates** to ensure smooth and parallel surfaces. A 6 kg weight was used to compress the composite resin. The mold was placed on a white mixing pad, and a visible light beam was then applied directly over the top surface of the composite resin disk for the predetermined time (10, 20, 30 seconds). These exposure times were monitored with a chronometer, since some light generators have been shown to possess inaccurate timers.[13] The glass plates were carefully removed following curing, and both surfaces of the specimen were immediately tested for hardness, using a Tukon Hardness Tester with a Knoop diamond and a load of 100 grams. Five indentations were made on the top and bottom surfaces of each specimen, in a clockwise manner, centre first, then at 1.5 mm south, west, north and east from the centre of the surfaces. Three samples were made at each exposure time (3) for each light generator (15) (**Table I**). The testing method yielded 675 top hardness measurements and 675 bottom hardness measurements.

Figure 1 Brass Mold

Analysis of variance techniques were used to analyze the data, followed by Duncan's multiple range test for posterior analysis of significant experimental factors.[14]

RESULTS

Top Hardness

Results from the Duncan's multiple range test (**Table II**) indicate significant differences among the light curing generators.

*Prisma-Fil (light shade), L.D. Caulk Co., Milford, Delaware.

**Microscope cover glass, Fisher Scientific Co., 8505 Devonshire, Montréal.

The highest hardness value is produced by the Heliomat "E" with a Knoop Hardness Number (KHN) of 20,58, and the lowest by the Poly-Lite 1000 with a KHN of 15, 14, which is a differential of 26 per cent between the two light generators.

Results from the Duncan multiple range test (**Table III**) indicate exposure time to yield significantly different top hardness values. Extending exposure time from 10 to 20 and to 30 seconds increases top hardness values.

Results from the Duncan's multiple range test (**Table IV**) indicate significant interactions between light curing generators and exposure time. In 10 seconds, the Heliomat "E" (JKLM) yields significantly higher top hardness values than the Initiator (NO) in 20 seconds. In 20 seconds, the Heliomat "E" (BCD), yields significantly higher top hardness values than the Spectra-Lite (EFG), the Prisma-Lite (EFGH), the Heliomat "A" (EFGHI), the Activator (FGHIJK), and the Poly-Lite 1000 (KLMN) do in 30 seconds. In 20 seconds also, the Litema (EF), the Fiber-Lite (EFGH), the Elipar-Visio (FGHIJ), and the Heliomat "S" (FGHIJ) present significantly higher top hardness values than the Poly-Lite 1000 (KLMN) in 30 seconds.

Bottom Hardness

Results from the Duncan's multiple range test (**Table V**) indicate significant differences among light curing generators. The Heliomat "S" produces the best bottom hardness value with a KHN of 9,34, while the lowest value is initiated by the In-Sight II with a KHN of 2,58. This is a striking difference of 72 per cent in the curing ability of these two light generators.

Results from the Duncan's multiple range test (**Table VI**) indicate exposure time required to yield significantly different bottom hardness values. Extending exposure time from 10 to 20 and to 30 seconds increases bottom hardness values.

Results from the Duncan's multiple range test (**Table VII**) indicate significant interactions between light curing generators and exposure time. In 10 seconds, the Heliomat "S" (MN), the Heliomat "E" (MNO), and the Visilux (NOP) yield significantly higher bottom hardness values than the In-Sight II (QR) does in 20 seconds. In 20 seconds, the Heliomat "S" (DEF) yields significantly higher bottom hardness values than the Heliomat "A" (GH), the Initiator (GH), the Poly-Lite 1000 (JKL), and the In-Sight II (MN) – in 30 seconds. In 20 seconds, the Heliomat "E" (FG), the Visilux (GH), and the Litema (HI) present significantly higher bottom hardness valeues thane the Poly-

TABLE I

Visible Light Generators List of manufacturers

Activator	Southern Dental Industries, Victoria, Australia
Command	Sybron/Kerr Co., Romulus, Michigan, U.S.A.
Dual-Lux	Sci-Can Inc., Division of Lux and Zwingenberger, Toronto, Canada
Elipar-Visio	ESPE/Premier, Seefeld/ Oberbay, W. Germany
Fiber-Lite	Dolan-Jenner Industries Inc., Woburn, U.S.A.
Heliomat "A"	Vivadent (U.S.A.) Inc., Tonawanda, New-York, U.S.A.
Heliomat "E"	Ivoclar/Vivadent, Schaan, Liechtenstein
Heliomat "S"	Vivadent (U.S.A.) Inc., Tonawanda, New-York, U.S.A.
Initiator (Model 200)	Solid State Systems Corp., Lynnwood, Washington, U.S.A.
In-Sight II	American Midwest, Dental Division of American Supply Corp., Desplaines, Illinois, U.S.A.
Litema (Pluraflex HL150)	Denco, Toronto, Canada
Prisma-Lite	L.D. Caulk Co., Milford, Delaware, U.S.A.
Poly-Lite 1000	Pro-Dent Systems, Portland, Oregon, U.S.A.
Spectra-Lite	Pentron Corporation, Wallingford, Connecticut, U.S.A.
Visilux	3M Dental Products, Manufactured by Demetron Research Corp., Donbury, Connecticut, U.S.A.

TABLE II

Top Hardness Light Generators

Duncan's multiple range test (alpha = 0,05)

SOURCE	MEAN HARDNESS	N	GROUPING
Heliomat "E"	20,58	45	A
Litema	19,34	45	AB
Heliomat "S"	19,15	45	ABC
Visilux	19,08	45	ABC
Command	18,63	45	BCD
Fiber-Lite	18,48	45	BCD
Elipar-Visio	18,09	45	BCD
In-Sight II	17,97	45	BCDE
Dual-Lux	17,67	45	CDEF
Spectra-Lite	17,44	45	DEFG
Heliomat "A"	17,32	45	DEFG
Prisma-Lite	16,49	45	EFGH
Activator	16,14	45	FGH
Initiator	15,99	45	GH
Poly-Lite 1000	15,14	45	H

Means with the same letter are not significantly different

TABLE III

Top Hardness Exposure time

Duncan's multiple range test (alpha = 0,05)

SOURCE	MEAN HARDNESS	N	GROUPING
30 seconds	20,78	225	A
20 seconds	18,48	225	B
10 seconds	14,23	225	C

Means with the same letter are not significantly different

TABLE V

Bottom Hardness Light Generators

Duncan's multiple range test (alpha = 0,05)

SOURCE	MEAN HARDNESS	N	GROUPING
Heliomat "S"	9,34	45	A
Visilux	8,26	45	A
Heliomat "E"	8,20	45	AB
Litema	7,38	45	BC
Fiber-Lite	6,97	45	BCD
Command	6,83	45	BCD
Prisma-Lite	6,51	45	CDE
Elipar-Visio	6,24	45	CDE
Dual-Lux	5,84	45	CDE
Activator	5,72	45	DE
Spectra-Lite	5,65	45	DE
Heliomat "A"	5,42	45	DE
Initiator	5,00	45	E
Poly-Lite 1000	4,95	45	E
In-Sight II	2,58	45	F

Means with the same letter are not significantly different

TABLE VI

Bottom Hardness Exposure time

Duncan's multiple range test (alpha = 0,05)

SOURCE	MEAN HARDNESS	N	GROUPING
30 seconds	9,89	225	A
20 seconds	6,58	225	B
10 seconds	2,51	225	C

Means with the same letter are not significantly different

Lite 1000 (JKL) and the In-Sight II (MN) – in 30 seconds. In 20 seconds also, the Fiber-Lite (IJ), the Command (IJ), the Prisma-Lite (IJK), the Poly-Lite 1000 (JKL), the Spectra-Lite (JKL), the Elipar-Visio (KL), the Dual-Lux (KL), the Activator (L), and the Heliomat "A" (L), present significantly higher bottom hardness values than the In-Sight II (MN) does in 30 seconds.

DISCUSSION

Composite resin hardness

A comparison between top and bottom hardness results shows top hardness to be constantly higher than bottom hardness. Hardness has been demonstrated to be a good indicator to evaluate the degree of cure for composite resins.[9] The hardness values obtained lend support to previous studies which found polymerization to decrease with the light source distance.[7,8,15] This may be explained by the fact that, among other things, polymerization is related to light intensity. Visible light, a form of radiation energy, is known to have an intensity which is inversely proportional to the square root of the distance from the source.[16] This is an inherent property of emitted electromagnetic radiation. In addition, attenuation of light by the composite resin also influences polymerization.

Clinically, top hardness is important, since the degree of cure for the exposed surface of a restoration implies resistance to erosion and abrasion. Visible light cured resins have been shown to exhibit good erosion and abrasion resistance.[5,6] Nevertheless, the continuation of cure after light exposure improves surface hardness over time, and may limit the clinical significance of immediate top hardness values.[11,17,18]

Bottom hardness is a good predictor for bond strength, as has been demonstrated by Schulein.[7] It is not known precisely how much changes in hardness of the composite resin, whether top or bottom hardness, might reflect on a restoration's clinical performance. However, it would seem logical to use exposure time periods which lead to immediate higher hardness values in order to minimize free monomer and potential pulpal irritation,[8] to improve immediate mechanical properties of the composite resin,[9] and thus maximize bond strength,[7] and to minimize the risk of secondary caries.[19] This underlines the importance of immediate higher bottom hardness values. Although the results of this study with limited exposure time periods cannot demonstrate the optimal curing time for each light generator, they can lend support to other studies which suggested exceeding manufacturer's curing time recommendations in order to obtain higher hardness values.[7-9]

Light curing generators

This investigation indicates that the degree of cure for the Prisma-Fil light cured resin varies with the light curing generator used.

Differences between lights were less in the top hardness evaluation where the Knoop hardness values ranged from 15 to 20, than in the bottom hardness evaluation where the Knoop values ranged from 2 to 9. This suggests that light generators possess different surface curing ability, and also different light beam penetrance. The latter finding may have greater clinical significance.

Influence of the exposure time

The data suggest that longer curing time produces increased hardness values, which not only is logical, but compares favorably with previous studies.[7,8,15,20] In addition, top and bottom hardness differences tend to decrease when the curing time is longer: at 10 seconds, the top/bottom hardness ratio is 7/1; at 20 seconds, it is 3/1; and at 30 seconds, it is 2/1.

Influence of the exposure time – light generator interactions

Bottom hardness values produced larger differences between light generators than did top hardness values. At 10 seconds, the Heliomat "S" yielded a mean bottom hardness value of 4,43, while the In-Sight II yielded a mean value of 1,14 – a difference which is approximately fourfold. At 20 seconds, the difference is greater than four times, the Heliomat "S" – yielding a mean value of 9,58 as compared to 2,20 for the In-Sight II. At 30 seconds, the difference dropped to a little more than triple, the Heliomat "S" – yielding 14,00 and the In-Sight II 4,41. These observations suggest that an optimal curing time could be determined for a specific light curing generator, although this is beyond the limits of this study. An interesting point that may influence curing time is the heat generated at the end-piece. Longer curing time may not be suitable for every light generator, since some produce much more heat than others.[13] Of course, excess heat production may affect pulp tissue, an area which needs further investigation.

Influence of light intensity and quality

The significant differences found among the curing ability of these light generators may be related to both the intensity and quality of the emitted light. The quality of the emitted light relates to the emission of a light beam of proper wavelengths. Intensity and quality relate to the characteristics of the bulb itself, since some bulbs have various intensities and generate specific wavelengths. They also relate to the filtration system and to the light transmission system. The filtration system should only screen out unwanted wavelengths. The transmission system may also act as poor quality filter, and attenuate light of proper wavelengths, especially if the fibre optic bundle is long or damaged.

Total intensity, brightness of emitted light, and intensity at proper wavelengths (440-480 nanometers), should not be confused. It is interesting to note that total light intensity has no direct relaiton to curing ability. Pollack and Lewis[10] were not able to establish a significant relationship between intensity and curing ability. The correlation of the results of this study with the total intensity of light as noted in a previous report,[13] yielded a Spearman-Brown correlation coefficient of r=0,21 for top hardness and of r=–0.22 for bottom hardness. This reinforces the supposition that it is not the overall light intensity that is important, but the intensity of light at the proper wavelengths (440-480 nanometers), as suggested by Blankenau et al[22] and Kilian.[11,21]

Bassiouny[23] observed that a higher wattage light source produced significantly superior physical properties of the composite resin tested, among which was the surface hardness. The Spearman-Brown correlation coefficient between 14 of the 15 light sources of this study (the Poly-Lite 1000 did not provide wattage information) and the top hardness results yielded r=–0,13, and r=–0.59, with the bottom hardness results. This study was unable to support Bassiouny's previous findings on this matter.

In addition, different light curing generators from the same manufacturer have been found to perform inconsistently.[13,24,25] Nevertheless, none of the generators studied were able to produce optimal hardness in the time recommended for 3 mm depth samples by the Prisma-Fil manufacturer. This may be related to the experimental mold, which may modify light transmission through the composite resin,[15,26] and thus prevent direct clinical inferences. Still, this technique allows comparison of the light curing generators.

Influence of the composite resin type

This study selected Prisma-Fil as the composite resin. A previous study[27] demonstrated fine particle (1 to 10 micrometers) composite resins allow better transmission of light than composite resins of smaller particle size. This finding was confirmed by Lee et al,[28] Salako,[29] and Ruyter and Oysaed,[30] who showed that microfilled

resins produced more light attenuation than fine particle composite resins.

The shade has also been demonstrated to influence light attenuation.[1-8] The light shade Prisma-Fil was thus selected to favor higher hardness values. It is suspected that with a relatively easy to polymerize composite resin, in terms of both composition and shade, light generators may show less differences in their ability to achieve polymerization. Thus, greater differences between light generators could be speculated when darker shades or/and microfilled resins are polymerized. Nevertheless, it should be pointed out that the results of this study apply to the resin tested (Prisma-Fil). Whether these data are relevant to other resin types awaits further investigation.

SUMMARY AND CONCLUSIONS

The results of this study indicate that in the composite resin tested, light curing units produce significantly different top and bottom hardness values, and extending exposure time increases these values. The data also suggest significant interactions between light curing generators and exposure time for both top and bottom hardness values. For instance, at 10 seconds, one light generator might be more efficient than another; however, at 30 seconds the reverse might occur. To achieve higher hardness values or more complete polymerization, curing time should exceed the manufacturer's directions, and successive polymerization of thin increments of composite resin (addition technique) should be used in large restorations.

Large variations in the polymerization ability of different light generators were found. These differences were more important at a 3-millimeter depth (bottom surface) than on the top surface of the tested composite resin. The results of this study show top hardness to be a poor predictor of bottom hardness. Clinically, the dentist cannot rely on the top surface hardness of a composite resin restoration to predict bottom hardness.

The light generators which produced the best bottom surface polymerization were the Heliomat "S", the Visilux, and the Heliomat "E".

In the selection of a light curing generator, other factors such as ease of handling, heat generated at the endpiece, and light intensity (blinding effect) should be taken into account from a clinical standpoint in addition to polymerization efficiency.

TABLE IV

Top Hardness
Light Generators — Exposure Time Interactions

Duncan's multiple range test (alpha = 0,05)

SOURCE		MEAN HARDNESS	N	GROUPING
Light Generator	Time			
Command	30s	23,09	15	A
Heliomat "E"	30s	22,54	15	AB
Litema	30s	22,49	15	AB
In-Sight II	30s	21,96	15	ABC
Heliomat "S"	30s	21,866	15	ABC
Dual-Lux	30s	21,862	15	ABC
Visilux	30s	21,72	15	ABC
Fiber-Lite	30s	21,62	15	ABC
Heliomat "E"	20s	21,50	15	BCD
Elipar-Visio	30s	20,80	15	CDE
Initiator	30s	20,11	15	DEF
Litema	20s	19,97	15	EF
Spectra-Lite	30s	19,75	15	EFG
Prisma-Lite	30s	19,60	15	EFGH
Fiber-Lite	20s	19,52	15	EFGH
Heliomat "A"	30s	19,47	15	EFGHI
Elipar-Visio	20s	19,07	15	FGHIJ
Heliomat "S"	20s	19,06	15	FGHIJ
In-Sight II	20s	18,79	15	FGHIJK
Visilux	20s	18,65	15	FGHIJK
Activator	30s	18,60	15	FGHIJK
Command	20s	18,25	15	GHIJKL
Heliomat "A"	20s	18,08	15	HIJKL
Dual-Lux	20s	17,93	15	IJKLM
Spectra-Lite	20s	17,91	15	IJKLM
Heliomat "E"	10s	17,69	15	JKLM
Prisma-Lite	20s	17,55	15	JKLMN
Activator	20s	17,36	15	KLMN
Poly-Lite 1000	30s	17,30	15	KLMN
Visilux	10s	16,87	15	LMNO
Heliomat "S"	10s	16,51	15	MNO
Poly-Lite 1000	20s	16,42	15	MNO
Initiator	20s	16,10	15	NO
Litema	10s	15,65	15	OP
Spectra-Lite	10s	14,64	15	PQ
Command	10s	14,55	15	PQ
Elipar-Visio	10s	14,40	15	PQ
Heliomat "A"	10s	14,39	15	PQ
Fiber-Lite	10s	14,29	15	PQ
Dual-Lux	10s	13,22	15	QR
In-Sight II	10s	13,13	15	QRS
Activator	10s	12,43	15	RS
Prisma-Lite	10s	12,28	15	RS
Initiator	10s	11,74	15	S
Poly-Lite 1000	10s	11,71	15	S

Means with the same letter are not significantly different

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TABLE VII

Bottom Hardness
Light Generators – Exposure Time Interactions

Duncan's multiple range test (alpha = 0,05)

SOURCE		MEAN HARDNESS	N	GROUPING
Light Generator	Time			
Heliomat "S"	30s	14,00	15	A
Visilux	30s	12,72	15	B
Litema	30s	11,75	15	C
Heliomat "E"	30s	11,58	15	C
Fiber-Lite	30s	11,47	15	C
Prisma-Lite	30s	10,52	15	D
Elipar-Visio	30s	10,37	15	D
Command	30s	10,21	15	DE
Dual-Lux	30s	9,75	15	DEF
Heliomat "S"	20s	9,58	15	DEF
Activator	30s	9,25	15	EFG
Heliomat "E"	20s	8,94	15	FG
Spectra-Lite	30s	8,82	15	FG
Visilux	20s	8,56	15	GH
Heliomat "A"	30s	8,455	15	GH
Initiator	30s	8,454	15	GH
Litema	20s	7,80	15	HI
Fiber-Lite	20s	7,14	15	IJ
Command	20s	7,07	15	IJ
Prisma-Lite	20s	6,90	15	IJK
Poly-Lite 1000	30s	6,59	15	JKL
Poly-Lite 1000	20s	6,31	15	JKL
Spectra-Lite	20s	6,17	15	JKL
Elipar-Visio	20s	6,01	15	KL
Dual-Lux	20s	5,99	15	KL
Activator	20s	5,69	15	L
Heliomat "A"	20s	5,62	15	L
Initiator	20s	4,72	15	M
Heliomat "S"	10s	4,43	15	MN
In-Sight II	30s	4,41	15	MN
Heliomat "E"	10s	4,07	15	MNO
Visilux	10s	3,50	15	NOP
Command	10s	3,20	15	OPQ
Litema	10s	2,60	15	PQR
Elipar-Visio	10s	2,34	15	QR
Fiber-Lite	10s	2,31	15	QR
Activator	10s	2,23	15	QR
In-Sight II	20s	2,20	15	QR
Heliomat "A"	10s	2,17	15	R
Prisma-Lite	10s	2,12	15	RS
Spectra-Lite	10s	1,97	15	RS
Poly-Lite 1000	10s	1,96	15	RS
Initiator	10s	1,84	15	RS
Dual-Lux	10s	1,79	15	RS
In-Sight II	10s	1,14	15	S

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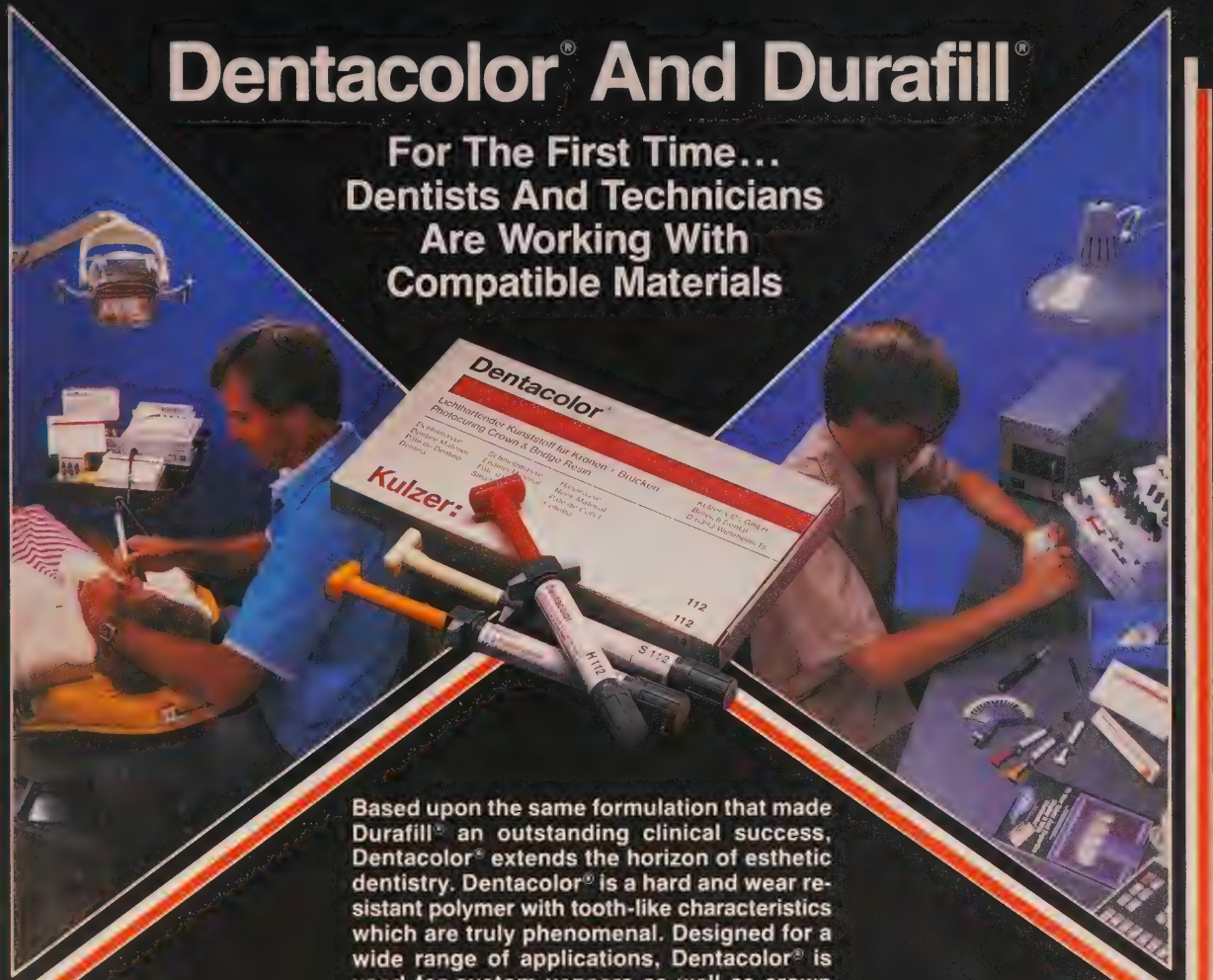

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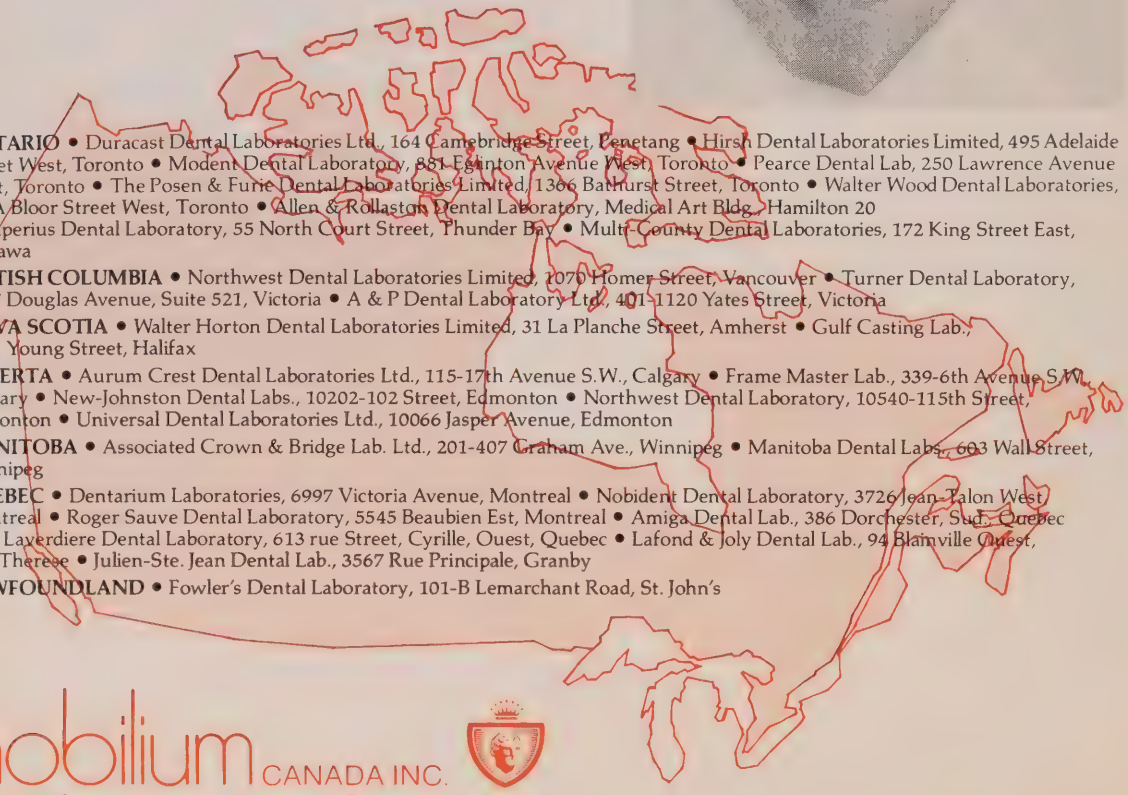

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Announcements

APRIL/AVRIL

April 18-21: Medic Asia, an exhibition of medical, hospital and dental equipment, Singapore. Contact: The PR Department, INTERFAMA PTE LTD., 1 Maritime Square, #12-05, World Trade Centre, Singapore 0409.

April 22-24: National Institutes of Health Consensus Development Conference on Anesthesia and Sedation in the Dental Office.'' Masur Auditorium Warren Grant Magnuson Clinical Centre, National Institutes of Health, Bethesda, Maryland. 20205. For more information or to register contact: Mr. Peter Murphy, Prospect Associates, Suite 401, 2115 East Jefferson St., Rockville Maryland, 20852, USA 301-468-6555.

April 27-28: The Michigan Dental Hygienists Association will hold its 63rd Annual Scientific Session at the Hotel Ponchartrain in Detroit, Michigan. Contact: Michigan Dental Hygienists Association, Katherine Radcliffe, Executive Director, 1609 East Kalamazoo St., Suite 11, East Lansing, Michigan, USA 517-484-1352.

MAY/MAI

May 2-4: Second International Congress on Dental Implantology and Biomaterials, Hotel Inter-Continental, San Diego, CAL. Information: Clifford J. Kirschner, Executive Director, The International Congress of Oral Implantologists, P.O. Box 2277, Grand Central Station, New York, New York, 10163. Telephone (201) 783-6300.

May 2-5: Alabama Implant Congress XI, Birmingham Alabama. Contact: Alabama Implant Study Group, P.O. Box 4682, Birmingham Alabama, USA 35206.

May 3-5: American Association of Dental Consultants sixth annual spring workshop, Marriott Long Wharf Hotel, Boston Massachusetts. Contact: Dr. Samuel S. Hirson, c/o Dental Service Corporation, 100 Summer St., Boston Massachusetts 02106 USA.

May 6-22: The 9th Alpha Omega Study Mission to Israel, featuring Dr. Gerald M. Kramer, Dr. Frank Celenza and Dr. Donald G. Woodside. Lectures entitled ''The Current State of the Art of Periodontics in Restorative Dentistry'' and ''An Update of Current Orthodontic Diagnostic and Clinical Concepts.'' Contact: Dr. Hart J. Levin, 2006 Bathurst St., Toronto, Ont., M5P 3L1.

May 11-13: Canadian Academy of Periodontology and Ontario Society of Periodontists joint meeting. Clinicians: Drs. Herman Corn, Mick Dragoo, George Zarb; Chairman: Dr. Anthony Melcher. Contact: Dr. Ken Hershenfield, 5 Fairview Mall Dr. Suite 210, Willowdale, Ont. M2J 2Z1.

May 12-17: 24th Congress of the Australian Dental Association, Brisbane Australia. Contact: Congress Secretariat, P.O. Box 29, Parkville, Victoria, 3052.

May 24-26: Alberta Dental Association 1985 convention. Jasper Park Lodge, Jasper Alberta. Contact: The Alberta Dental Association Convention Office, #204 10441-124 St., Edmonton, Alta., T5N 1R7 or call 403-482-5719.

JUNE/JUIN

June 1: Organization for Nutrition Education is organizing a teleconference on ''Nutrition Education – Making Media Connections.'' Depending on the time zone, conference times will start between 8 am and 12:30 pm. Fee to participate in the conference will be $45. Registration forms can be obtained from: Carolyn Pfortmueller, 7531 Barkerville Court, Richmond, B.C., V7K 1K8, phone 604-294-3775 or 604-274-7321.

June 12-16: Saskabash. Western Canada Dental Society Convention, Saskatoon, Saskatchewan. Contact: Dr. Keith Hamilton 306-374-7272.

June 16-20: The 4th International Congress of Auxology, Université de Montréal, Montréal, Quebec. Contact: Micheline Brault Dubuc, General Secretary, International Congress of Auxology, Université de Montréal, CP 6128, Succursale A, Montréal, Qué. H3C 3J7.

June 22-29: Yukon Dental Association, Summer Convention '85, Kluane National Park, Contact: Dr. John Stern, 3089 3rd Ave., Whitehorse, Yukon, Y1A 5B3.

JULY/JUILLET

July 3-5: Bermuda Dental Association 1985 Convention. Guest speakers include Dr. Ron Jordan from the University of Western Ontario. Contact: Dr. Robert Gibbons, Erin, Paget 6-20, Bermuda, 809-296-4477.

July 8-9: National Conference on the Delivery of Periodontal Health Care, Hillenbrand Auditorium, American Dental Association Building, 211 E. Chicago Ave, Chicago, Ill. USA. Contact: American Academy of Periodontology, Room 924, 211 E. Chicago Ave., Chicago, Ill. 60611.

SEPTEMBER/SEPTEMBRE

September 12-14: 37th Annual New Orleans Dental Conference, New Orleans

Hilton and Towers, New Orleans Louisiana. Conference theme is "The Magic of Fine Dentistry." Contact: The Conference Office, 3101 West Esplanade Avenue, Suite 119, Metairie, LA. 7001, 504-834-6449 for information.

September 20-27: Annual meeting of the Canadian Society of Forensic Science jointly with the Society of Forensic Toxicologists and the American Society of Questioned Document Examiners, Hyatt Regency Hotel, Montreal, Quebec. Contact: Executive Secretary, Canadian Society of Forensic Science, 2660 Southvale Cres., Suite 215, Ottawa, Ont., K1B 4W5, 613-731-2096.

September 27-29: Canadian Academy of Endodontics annual meeting, Ottawa Ontario, Four Seasons Hotel, Contact: Dr. Lorne Chapnick, 2200 Yonge St., Suite 1009, Toronto, Ont. M4S 2C6.

September 21-27: 1985 Congress of the Federation Dentaire Internationale is being held in Belgrade, Yugoslavia.

September 29–October 2: Canadian Dental Association national convention. Ottawa, Ontario, at Canada's Capital Congress Centre. Contact: Canadian Dental Association, 1815 Alta Vista Dr., Ottawa, Ont. K1G 3Y6.

OCTOBER/OCTOBRE

October 13-18: 6th Congress of the International Society for Laser Surgery and Medicine. Organized by the Israel Society for Laser Surgery and Medicine. Jerusalem, Israel. Contact: DIT Travel/Convention Division, 1183 Finch Avenue West, Suite 203, Downsview, Ontario M3J 2G2, Attention: Rifka Boruchowicz, Convention Secretariat, phone 416-663-9100/07.

October 30: The first national and international scientific encounter of the dental schools, during the XVIII National and International Congress of the Mexican Dental Association. Contact: Admgen Ezequiel, Montes 92, Mexico, D.F., 06030 Mexico 915-566-61-33.

DALHOUSIE UNIVERSITY FACULTY OF DENTISTRY
DIVISION OF PERIODONTICS

Two positions will shortly become available with the Division of Periodontics.

DIRECTOR OF POST-GRADUATE PERIODONTICS
The successful applicant will have completed accredited graduate education in Periodontics, have significant experience in administration and research and, ideally, a Ph.D. in a related area. Responsibilities include administration of the Post-Graduate Periodontics Program and related teaching, some undergraduate teaching and continuing education and the furthering of research in Periodontology within the Faculty.

ASSISTANT PROFESSOR OF PERIODONTICS
The successful applicant will have at least 1-2 years teaching experience and have completed an accredited graduate education in Periodontics.

Duties include teaching and clinical instruction for Dental Hygiene, Dental and Post-Graduate Periodontics Students, continuing education and research.

Both positions require eligibility for licensure in Nova Scotia and include one day extra-mural Private Practice privilege. Dalhousie University is an Equal Opportunity Employer. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian Citizens and permanent residents.

Enquiries with current Curriculum Vitae should be sent to the following before April 30, 1985:

Dr. Crawford A. Bain. Head, Division of Periodontics
Department of Restorative Dentistry
Faculty of Dentistry
Dalhousie University
Halifax, Nova Scotia B3H 3J5

NOVEMBER/NOVEMBRE

November 2-5: 126th Annual Session of the American Dental Association, San Francisco California. Contact: The American Dental Association, 211 East Chicago Ave., Chicago Ill., USA 60611 USA.

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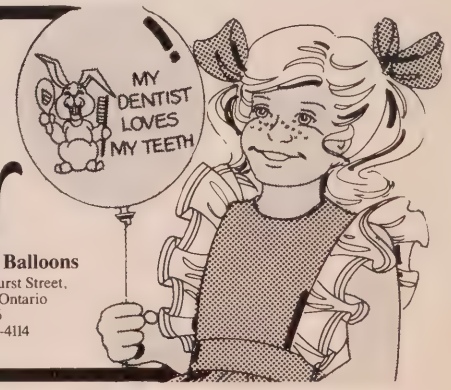

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NEW BRUNSWICK—MONCTON. Well established practice for sale in an excellent Professional Building. Good gross in two fully equipped operatories. Owner leaving for further studies but will assist in smooth transition. Call after 5:00 p.m. (506) 382-6774 or Write 28 Derby Street, Moncton, New Brunswick E1C 6Y3.

ASSOCIATESHIP AVAILABLE

NORTHWEST TERRITORIES—Yellowknife. Full time associate position available in Yellowknife N.W.T. Excellent remuneration and outdoor activities. Reply CDA Box. No. 2258.

BRITISH COLUMBIA—Associate Wanted. to share quality practice in Revelstoke B.C. Located in Columbia River Valley west of Rockies with unlimited recreation. Ideal situation for married man or woman looking for fresh air environment and view to establishing long term relationship. Excellent opportunity for alternate lifestyle that smaller community has to offer. Please phone collect 604-837-5149 (days) or 604-837-5575 evenings.

BRITISH COLUMBIA—An associate is needed for a busy office in Burnaby near the Lougheed Mall. 15km. from downtown Vancouver. The equipment includes four operatories each with X-ray head, Cox units and light curing accessories, a panorex, a large waiting room and plenty of parking. Right on a major bus route. The position is available June 1, 1985. The present associate is returning to school. This position could evolve into a partnership. Please reply to CDA Box No. 2260.

BRITISH COLUMBIA—INTERIOR. ASSOCIATESHIPS available in large group practice in PRINCE GEORGE. Possible positions also available 75 miles south in QUESNEL satellite. Excellent practice opportunities for the right individuals. For more information please contact Dr. M. Rivera or Mr. B. Smith at 4122 – 15th Avenue, Prince George, B.C. V2M 1V9. (604) 562-5551.

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ALBERTA—Edmonton. Associates required for extended hour walk-in storefront dental offices. Five established clinics and two new clinics opening soon. Contact Dr. Azarko, 14938 Stony Plain Road, Edmonton. Phone (403) 483-7079.

ONTARIO—Associate needed for new and growing group practice in Midland Ontario. Dr. S. Martin, Mountainview Mall, R.R. #2 Midland, Ont. L4R 4K4.

ONTARIO—TORONTO. Wanted: Associate/Specialist with own clientele for one to three days in sophisticated Yorkville office. (416) 967-1211.

NORTHERN ONTARIO—Associate needed, full time, for established solo practice in Noelville Ontario. Option to buy. Incentive grant available. Reply to Dr. C.A. Sims, Box 128, Noelville, Ontario, P0M 2N0.

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CUSO

Dental CJ-1 Program
151 Slater Street
Ottawa, Ontario K1P 5H5

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This position involves assisting Public Health Units and other agencies in the planning and execution of Community Dental Programs. Considerable travel within the Province is required. Eligible candidates must possess a Baccalaureate in Dental Hygiene or Bachelor of Science in Dentistry and have considerable related experience or a Masters Degree and some experience. Eligibility for registration with the Newfoundland Dental Board is required.

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APPLICATIONS MAY BE SUBMITTED IN CONFIDENCE TO:

Public Service Commission
16 Forest Road
St. John's, Newfoundland A1C 2B9

THIS COMPETITION IS OPEN TO BOTH MEN AND WOMEN.

JANUARY 18, 1985

PUBLIC SERVICE COMMISSION

EDMONTON LOCAL BOARD OF HEALTH

ALBERTA — Edmonton. Full-time position-Dental Health Services Division, Edmonton Local Board of Health. Applicants are invited to fill a full-time dental clinician position, available September 1, 1985. Conditions: license or eligible for licensure in Alberta, interested in prevention oriented services and able to work with children in a public health setting. Curriculum vitae and the names of three references should be submitted. For more information please phone (403) 428-3636, ext. 207.

Dr. A. Lizaire, Director of Dental
Suite #500, 10216-124 St.
Edmonton, Alberta, T5N 4A3

THE UNIVERSITY OF MANITOBA FACULTY OF DENTISTRY

The Department of Rehabilitative Dental Science has a vacancy at the Assistant or Associate Professorial level. Teaching responsibilities will be primarily, but not exclusively, within the Section of Removable Prosthodontics.

A research commitment is anticipated and an opportunity exists for the provision of patient care at an advanced level.

Graduate training in an accredited prosthodontic program is required and experience in general practice highly desirable.

Initially the appointment will be on a term basis, with the possibility of becoming tenure track if mutually desirable.

Eligibility for licensure in Manitoba is required.

In accordance with Canadian Immigration requirements this advertisement is directed to Canadian Citizens and permanent residents. Applications are invited from both males and females.

Applications should be directed (accompanied by references and C.V.), no later than April 1, 1985 to:

Dr. Justin A. McCarthy, Head
Department of Rehabilitative Dental Science
Faculty of Dentistry,
University of Manitoba
780 Bannatyne Avenue
Winnipeg, Manitoba R3E 0W3

Telephone #: (204) 786-3664

UNIVERSITY OF ALBERTA HOSPITALS

CLINICAL DIRECTOR

Department of Dentistry

Applications are invited for the position of Clinical Director starting on September 1, 1985. Main responsibilities of the Clinical Director are the day to day care of the department including teaching and supervision of the general practice residents and the students on their rotations. Other responsibilities include consultation and treatment of special inpatients and outpatients referred to the department.

All applicants must have a knowledge of all aspects of Dentistry and preferably some previous experience in hospital dentistry. General practitioner with a number of years of clinical dentistry in a hospital environment is a desirable attribute. The applicant must be a graduate of a Dental School accredited with either the Canadian Dental Association or the American Dental Association.

Preference given to applicants with Canadian citizenship or landed immigrant status.

Deadline for submission of applications is March 31, 1985.

For submission of applications and further information please contact:

Dr. B. K. Arora, Chairman
Department of Dentistry
University of Alberta Hospitals
8440 - 112th Street
Edmonton, Alberta T6G 2B7
(403) 432-5864

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Enquiries and applications should be addressed to:

Dr. G.R. Holland
Division of Endodontics
Faculty of Dentistry
5065 Dentistry/Pharmacy Centre
University of Alberta
Edmonton, Alberta, Canada
T6G 2N8

THE BRUSH, THE TOOTH AND LISTERMINT WITH FLUORIDE.

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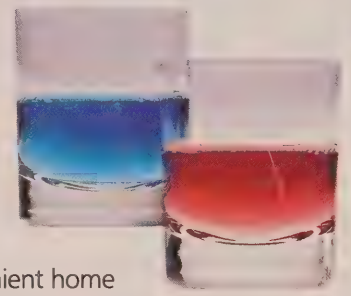

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April/avril 1985 Vol. 51 No. 4

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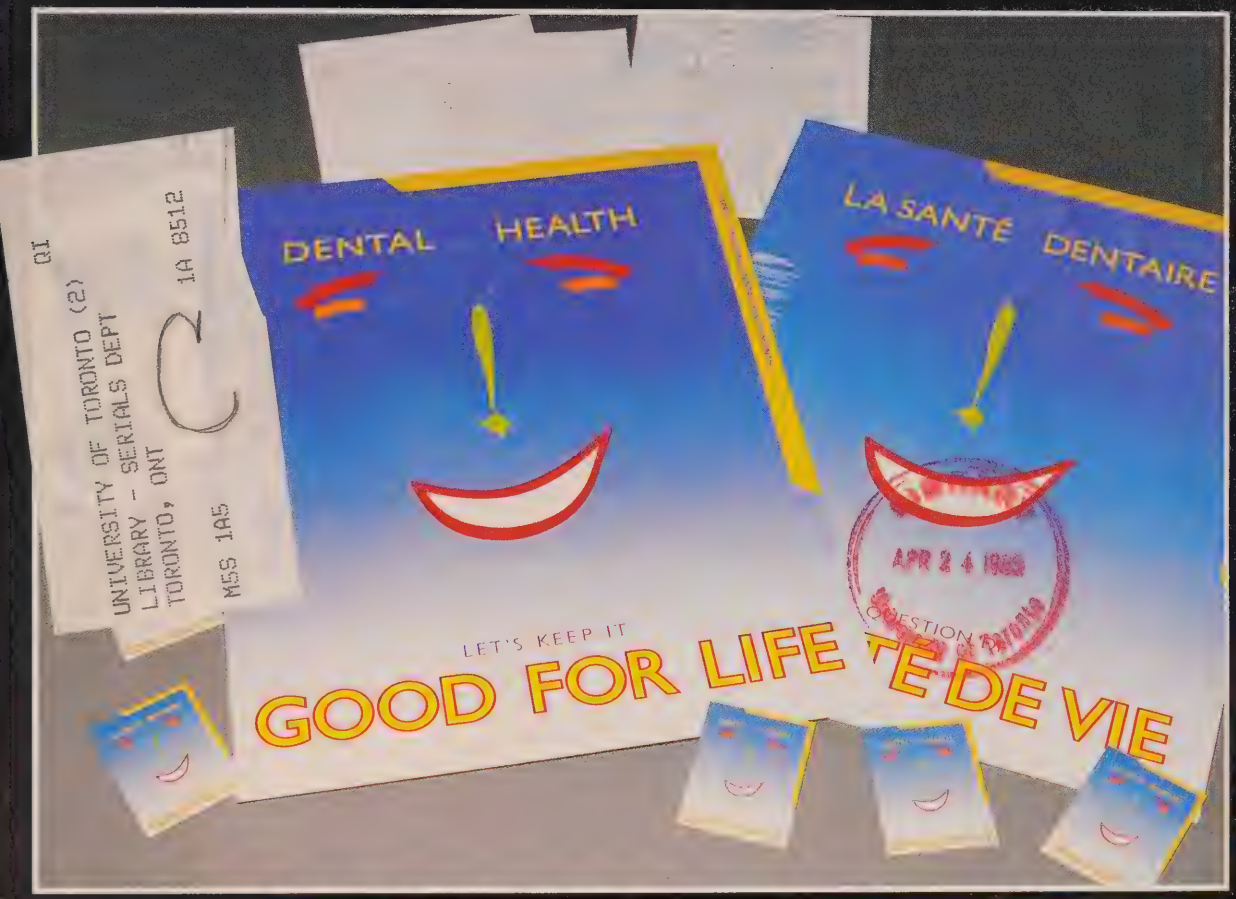

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References: 1. Ostrom, C.A. et al., J Dent Res, 56(3):212-221, 1977. 2. Arends, J., ten Cate, J.M., J Cryst Gro, 53:135-147, 1981. 3. Silverstone, L.M., Caries Res, 11 (Suppl. 1):59-84, 1977. 4. Data on file at Procter & Gamble, Inc. 5. Mobley, M.J., J Dent Res, 60(12):1943-1948, 1981. For further information, please contact Crest Professional Services, P.O. Box 355, Station A, Toronto, Ontario M5W 1C5

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L'ASSOCIATION DENTAIRE CANADIENNE

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COVERING OURSELVES

In spite of its title, this editorial is not about corporate skullduggery (as in covering your . . . . .). Nor is it about exposure of any kind. Instead, your editor this month intends to (pardon the pun) cover our covers.

Just lately the Journal covers have come under fire from some of the membership. One issue which caused a particular stir was February 1985. Indeed, one wag commented that he thought he had received "Canadian Aviation" instead of JCDA. The February cover, although not particularly dental in nature, at least reflected the Journal's emerging philosophy to appeal to the Total Dentist.

That cover was related to a dental hobby story inside the February issue about an Alberta dentist who is also a private pilot. Readers in future issues may be expected to see more such "hobby" covers, mainly because the stories of dentists' hobbies or leisure interests of all types are reflective of the Journal's Total Dentist appeal.

When the Journal underwent its redesign in February of 1984, it was decided that, although a difficult task, the Journal should try and reflect as many aspects of dentists' lives as possible – the Total Dentist. This philosophy in no way detracts from the inherent scientific nature and reputation for high quality original articles for which the Journal has become known. Instead the redesign and re-think, if you will, toward a greater appeal to CDA members as total human beings, and not just as dental professionals, has made the Journal more modern and more appealing.

Part of that new appeal has been our covers. In fact, the June 1984 cover design has already won an award of merit. Our covers in the last year particularly, at least in the humble opinion of this editor, have been both visually appealing and always reflected something of the contents. In the past, Journal covers have been visually appealing, but were often criticized for being not "dental" enough. Now, dental or not, the covers currently reflect at least a topic inside the magazine which will be of some interest to the membership.

In the opinion of this editor, our Journal covers do what a cover is supposed to do – appeal to and bring the reader inside the magazine. While some of our sister publications may not share in this philosophy and choose instead an artist's painting or a cute photograph for their covers, it is still the opinion of this editor that covers should at least in some way reflect what is inside and not offend the readership.

If some of our readers want to comment, either negatively or positively on anything in the Journal, including the cover, they are more than welcome to do so. From reading other publications in recent months, it is clear that some of our sister publications are causing some consternation among their readers with covers which are to some of those readers, offensive. While it is not the place of this publication to offer comment on what our counterparts do on their covers, it is the opinion of this editor and the philosophy of the JCDA to use our covers and our Journal to enlighten, inform, entertain and appeal to our membership. It is to be hoped that we have thus far, succeeded.

Carolyn Hackland
Editor

TREATMENT PHILOSOPHY IN DENTAL SCHOOLS

Although there is general agreement in educational circles that the clinical experience to which dental students are exposed should simulate, as closely as possible, that which they will ultimately encounter in general practice, the issue appears to have not yet been entirely resolved to the ultimate benefit of the patient, student and faculty.

The unquestionably ethical approach to this matter employed by Canadian universities frequently fails to produce ideal results largely due to deeply entrenched, historically proven modes of treatment delivery which have endured because the primary emphasis has been placed upon justifiable educational considerations with sometimes no more than token acknowledgement of the "service" aspect of the clinic. Clinic directors and patient managers find themselves in a critically significant position to observe the effect of existing attitudes in this matter upon the best interests of all parties involved.

It is impossible to consider the treatment philosophy of dental schools without addressing the debate related to a preference for either comprehensive dental treatment or the employment of strictly numerical divisional or departmental criteria. In a purely theoretical sense, it is not unreasonable to assume that it may be possible to satisfy both these ideals without any risk to the integrity of the educational process.

As the obvious goal of dental education is to prepare students for the competent and ethical application of their diverse skills in satisfying the oral health needs of the public, there must be a realistic relationship between the definition of "comprehensive treatment" within dental schools and that prevailing in private practice.

Beyond the basic goals of competent diagnosis and clinical perfection, total treatment involves comprehensive treatment planning and the eventual execution of that plan in a sequential manner with priorities dictated by the patient's individual needs. This describes "comprehensive dental care" whereby all phases of required treatment are completed in logical sequence until all treatment is finished. In private practice this appears to be the only practical, efficient approach to treatment delivery. Diagnosis is performed; goals are set; treatment is rendered.

In an educational environment, however, special conditions exist which, for some patients, impair the institution's ability to simulate the comprehensive nature of private practice treatment delivery, at least when considered relative to a finite period of time. This reference to time factors is necessitated by the fact that treatment in an educational clinic, even though thoroughly executed, moves at a much slower pace than elsewhere. Is comprehensive treatment ideal if delivered over a painfully extensive period of time? Possibly not, but most patients tolerate the prolonged treatment time very well and understand the laborious necessity for instructors to assess each stage of treatment. A tolerant appreciation of Parkinson's First Law is probably not undesirable in dental schools in order to avoid restrictive time constraints on students in a learning situation. This might be particularly true in the earlier stages of clinical practice when the student is striving to assimilate qualitative responsibilities which, it is hoped, will endure throughout his professional life. One can reasonably conclude then that it would not be judicious to attempt to reduce treatment time by interfering with the natural pace at which students work, even though the situation may be somewhat disadvantageous for their patients. The patients in any case will receive an excellent quality of treatment at very low cost.

Relative to the authenticity of clinical experience for students, whether or not the total treatment is rendered by one student should be of cardinal importance, but this is often compromised by classifying patients as "periodontal", "operative", "crown" or "bridge" cases etc. Some patients, perhaps forty to fifty percent, do indeed receive all required treatment completed by one student in a reasonable period of time, namely one or two academic terms. Whereas all dental schools accept some patients for specific "limited treatment" e.g. endodontic therapy, single crowns etc., many patients who require a comprehensive variety of treatment are only partially treated by their original student and then get re-assigned to other students for the continuation of treatment. This process of re-assignment can create immense administrative problems due in part to the fact that partially treated cases are less than ideal for assignment because of difficulties in their re-classification. In this respect, the treatment philosophy of a dental school can appear to be out of step with the actual dental needs of the public. Time factors and the continuity of treatment should always be regarded as important in the delivery of health services.

The "pigeonhole" classification of patients into single major treatment categories appears to be the most significant cause of dental schools' inability to deliver the optimal service which they are all eminently capable of delivering. All phases of general dental practice are being supplied at a very high standard of delivery; what is most likely required is that students treat a lesser number of patients but that they treat them more comprehensively. This change in policy would be in complete harmony with the present process of diagnosis and treatment planning as practised in all schools. The numerical requirements of teaching divisions or departments could still be satisfied providing that patient selection and assignment could be more carefully monitored and controlled. Screening experience has clearly shown that most adult patients do indeed fit the "comprehensive" category. Any serious deviation from this reality seems to interfere unfavourably with the patients' continuity of treatment. A patient who needs some periodontal treatment, operative procedures plus fixed and/or removable prostheses must surely be an eminently suitable patient for teaching purposes. It is quite possible to complete such cases in one or two academic terms. More protracted periods of treatment time most certainly result in an increased "drop-out" rate among patients before full treatment can be consummated to the maximum advantage of the educational institution.

The achievement of such idealistic but attainable goals requires that a dental school embrace a philosophy of treatment delivery that acknowledges the actual oral condition of the public, following which a management system will become apparent. Following development of each patient's treatment plan, a group of patients could be assigned to each student so that the total number of treatment procedures in each category for all of his/her patients would satisfy prescribed divisional or departmental requirements. Surplus units in particular categories would be co-assigned with other students who needed those units. Accordingly, most patients would receive total treatment with the same student and even those who would be co-assigned between two students would get more or less simultaneous care from both without being returned to Clinic Administration for re-assignment in the subsequent year.

The high quality of treatment rendered in dental schools is indisputable. The dedication of those faculty members who ensure such quality during the process of educating dental students is of the highest possible order. The condensation of treatment time and the encouragement of conditions which would increase the number of cases treated comprehensively can only increase the satisfaction derived by all participants in the educational-treatment process. It is a foregone conclusion that computerization of data would be the only tool which would make possible the handling of such detailed information involved in the suggested system. That capability, however, seems more than ever to be inextricably related to the efficient practise of dentistry in the future.

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London, Ontario
N6A 5C1

News Update

CONGRÈS DE L'ADC — 29 SEPT - 2 OCT. — CDA CONVENTION

PARTICIPATION COURSES BEING OFFERED BY CDA

Nine participation courses will be offered by the Canadian Dental Association on Sunday, September 29, prior to the opening of the Convention that evening, in the foyer of the Ottawa Congress Centre.

The following courses have been arranged:

- Clinical Photography for the Busy Practitioner
- Planned, Sequented Steps for Competent Emergency Care
- Custom Staining and Contouring of Porcelain for Crown and Bridge Work
- Hydrocolloid Techniques for Quality Impression. Methodology and Technique for Easy Introduction to One's Office
- C.P.R. Basic Cardiac Life Support Course
- Endodontics
- Radiology Techniques for Quality Control, Including Panoramic, Cephalometric and TMJ Techniques.
- Custom Staining and Anatomic Contouring for Aesthetics in Resin-Bonded Restorations.
- Computerization for the Dental Office in the 80s. Why, Who and With What?

Full details of the courses and registration details will be announced in future issues of the Journal.

DETAILS OF SCIENTIFIC PROGRAM ANNOUNCED

Details of the scientific program at the Canadian Dental Association's annual Convention in Ottawa, September 29 – October 2 have been announced by the chairman of the arrangements committee, Dr. John Hardie.

The following tabulated information indicates the speakers, their topics and location of the presentations, in the Ottawa Congress Centre.

DAY	LOCATION	SPEAKER	TOPIC
Monday, Sept. 30 9 to 12 noon	Lecture Room A	Dr. T.L. Snyder	"Should There be a Computer in Your Practice?"
	Lecture Room B	Dr. Kenneth C. Bentley, Chairman	Royal College of Dentists of Canada Symposium "Facial Pain."
	Lecture Room C	Dr. E.H. Williamson	**Grieve Memorial Lecture** "Diagnosis, Prevention and Management of TMJ Dysnsfunctions in Orthodontics."
Monday, Sept. 30 2 to 5 p.m.	Lecture Room A	Dr. Ralph I. Brooke, Chairman	Royal College of Dentists of Canada Symposium Management of the Patient with Chronic Facial Pain
	Lecture Room B	Dr. Pierre Bois, President, MRC, will give introduction	Graduate Student Presentations
	Lecture Room C	Dr. Roger K. Hall	"Paedodontics."
Tuesday, October 1 9 to 12 noon	Lecture Room A	Dr. R.E. Goldstein	**"The Aesthetic Approach to Restorative Dentistry."**
	Lecture Room B		Panel Discussions on Internal Medicine
		Dr. W.L. Williams	"The Etiology and Current Treatment of Cardiac Disease."
		Dr. A.L. Weinberg	"Update on Blood Dyocrasias, Diabetes Mellitus and Rheumatoid Arthritis."
		Dr. C.E. Danjoux	"The Etiology and Current Treatment of Cancer."
	Lecture Room C	Dr. C.A. McCulloch	"Periodontal Therapy in the 1990s."
Tuesday, October 1 2 to 5 p.m.	Lecture Room A	Dr. R.E. Goldstein	(See morning schedule)
	Lecture Room B	Dr. J.J. Pindborg	"Oral Medicine and Pathology"
	Lecture Room C	Dr. A.S.T. Franks	"Prosthetics"
Wednesday, October 2 9 to 12 noon	Lecture Room A	Dr. A.S.T. Franks	"Geriatric Dentistry"
	Lecture Room B	Dr. James Main, Chairman	**Symposium on Oral Cancer**
		Dr. J.J. Pindborg	"Recognitions and Diagnosis of Oral Cancer."
		Dr. J. Eapen	"Treatment of Oral and Related Cancers."
		Dr. J. Epstein	"Oral Complications of Cancer Chemotherapy and Radiotherapy."
	Lecture Room C 9-11 a.m.	Dr. Wesley J. Dunn	"Dental Law"

DAY	LOCATION	SPEAKER	TOPIC
	11 a.m. to noon	Mr. J.B. Nagy	"The Four Dimensional Tooth Coloring System"
Wednesday, October 2 2 to 5 p.m.	Lecture Room A		**Panel on Ridge Augmentation**
		Dr. P.J. Boyne	"Basic Research and Surgical Techniques in Ridge Augmentation."
		Dr. G.A. Zarb	"Prosthetic Rehabilitation of Augmented Ridges."
	Lecture Room B	Dr. J. Epstein, Chairman	**Symposium on Oral Cancer**
		Mrs. J. Thomas	"Oral Hygiene and Preventive Programs for Cancer Patients."
		Dr. G. Bradley	"Dental Restorative and Surgical Care for Cancer Patients."
		Dr. P. Stevenson-Moore	"Prosthetic Dental Care for Cancer Patients."
		Dr. J.H.P. Main	"Provincial Health Plans and Financial Support for Dental Care of Cancer Patients."
	Lecture Room C	Dr. B.H. Dolansky	"Update on Endodontics."

CONVENTION CHAIRMAN, DR. O'CONNOR GIVES CREDIT TO SOCIETY COLLEAGUES

Dr. Donald J. O'Connor, the Ottawa GP serving as general chairman of the 1985 CDA Convention, recently told the Journal the program "is in good shape" largely because of the experience and organizational abilities of colleagues within the Ottawa Dental Society.

Much of this experience came about through necessity, he said. Because there is no dental faculty in the Ottawa area, and dentists wished to have the benefit of continuing education courses, members of the Ottawa Society became involved in setting up programs and engaging lecturers to provide that service. As a result, "we have a good group experienced in putting on programs," Dr. O'Connor said. Many of these people are members of the Convention committee, and "I think I was born to delegate," he noted.

However, the Winnipeg-born graduate of the University of Toronto Faculty of Dentistry (1958) has a wealth of organizing experience of his own. This was gained through activities in fishing and golf clubs, scouts, little league baseball, etc. Professionally, Dr. O'Connor has served as President of the Ottawa Dental Society, the Ottawa Association for the Prevention of Dental Disease (which arranges the continuing education programs) and which Dr. O'Connor continues to serve as Permanent Secretary, and was for three terms (6 years) a Governor of the Ontario Dental Association. He was also the founder and a past-president, of the Ottawa Dental Study Club.

The Ontario Dental Association honored him in 1984 with an award for his service to that organization.

Dr. O'Connor is a Fellow of the International College of Dentists.

'Fullest social program'

Dr. O'Connor said his committee had worked toward the objective of setting up the program one year in advance, then spending the months previous to the Convention ironing out the wrinkles. He believes there was much merit in the concept.

"We have probably the fullest social program we've ever had." He referred to "a very large registration party the opening Sunday," and on the following night, two parties in addition to the more formal "President's Ball." He spoke also of a lumberjack competition for dentists.

Something new has been added for the athletically-minded, he said. A directory of the regional facilities for golf, squash, racquetball and tennis, at some of Canada's finest clubs, has been compiled. This, he explained, was not intended to lure people away from Convention activities, but as a service for those who will be spending additional days in Ottawa, before or after the Convention.

'Great audio-visual facilities'

Dr. O'Connor said there are "great audio-visual facilities in the new Ottawa Congress Centre, and the finest in translation services will be provided.

He paid particular tribute to Dr. Bruce Robinson and his wife, Dorothy for the quality of the Convention's social program they and their committee have organized.

He also believes the quality of the scientific program, organized under the chairmanship of Dr. John Hardie, will be second to none.

(Photo: C. Metcalfe)

View of Ottawa looking westward from the Westin Hotel one of the two Convention '85 headquarters hotels. Left centre foreground is the National Arts Centre, at the far right is Parliament Hill.

Dr. Donald J. O'Connor

Health screening

Another feature of the Convention will be a health screening facility to detect dental health problems such as Hepatitis B or mercury effects.

Health and Welfare Canada will be the host of this screening which will be conducted as a bona fide study. The results will be published in a report and that report will subsequently be published in this Journal.

Ottawa became home

Dr. O'Connor's family moved from Winnipeg to Ottawa when he was in his late teens and he completed high school in that city.

He entered the University of Toronto in 1953 still debating with himself whether it would be medicine or dentistry. Dentistry won, because of experiences in his childhood, he believes. As a child, he admired the family dentist, and consequently, the profession. It had made a deep impression.

Following graduation in 1958, he returned to Ottawa and became an associate with Dr. Jack Berman. He later embarked on a solo practice for about three years.

Dr. O'Connor has been with his present partner, Dr. Alan Buckley, for about 21 years. They actually have separate practices in downtown Ottawa, but share staff and facilities. Both are general practitioners with emphasis on occlusion and reconstruction.

He is married to the former Beverley Bynoe and the couple has two married daughters, Barbara, receptionist in his dental clinic, and Kerry, in Toronto.

A son, David, is in his final year of medicine at the University of Toronto.

1985 CONVENTION SOCIAL PROGRAM HIGHLIGHTS

The 1985 Convention has some impressive events taking place for delegates and their spouses. Watch the Journal for more details on the Social Program as they become available.

Saturday, September 28

White Water Rafting on the Ottawa River.

Sunday September 29

- 10K CDHA Fun Run/Walk: sponsored by Nike, at the Arboretum, Central Experimental Farm.
- CDAA and spouses, Ottawa City Tour.
- CDA Registration Party: Canada on Parade: Ottawa Congress Centre.

Monday September 30

- Spouses Fashion Show and luncheon at the National Arts Centre.
- CDA President's Ball and Reception. Dinner and dance at the Westin Hotel.
- CDHA Casino/Cabaret night at the Chateau Laurier Hotel.

Tuesday October 1

- Spouses House and Garden Tour and Lanark Country Tour.
- CDA Bytown Bash: A fun night at the Palais des Congrès in Hull, Quebec.

Remember, these are just the highlights of a full program. Watch these pages for further details.

Why on earth should I change my Will?

Because things change. Not that your love or caring for your family has changed one bit, but circumstances change. In the light of these changes, it may be to your family's advantage for you to review and update your Will.

For instance, your children may have reached adulthood There have been major changes in the law, recently. Your financial picture may have changed, and you could find some tax advantages. Any of these possibilities makes it worthwhile to review your Will

When you do, think of us. A simple sentence, "I give to the Canadian Cancer Society the sum of _____ dollars" will help us continue the promising new research made possible by the Marathon of Hope

The fight against cancer will take years of determined effort Your caring could make the difference between fighting and winning

CANADIAN CANCER SOCIETY

10 KM CDHA DENTAL FUN RUN

Sunday, September 29, 1985
9:00 A.M.
ARBORETUM
CENTRAL EXPERIMENTAL FARM
OTTAWA

Entry Deadline Date: September 6, 1985
Entry Fee – $8.00 (per person)

NAME _____

ADDRESS _____

T-Shirt Size

Men's			Ladies'		
☐ S	☐ M	☐ L	☐ S	☐ M	☐ L

Please make cheque payable to: **The Canadian Dental Association** and mail along with completed registration form to:

Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

1985
CDA National Convention
Registration Form

Name: Miss/Mrs. Dr./Mr. _____
(Please print for name tag)

Address: _____

City _____ Province _____ Postal Code _____

Telephone No.: _____

Name of spouse, if registered: _____

CDA Pre-Convention Participation Courses (Sunday, September 29)
Limited attendance courses—please indicate choices in order of priority
Open to registered CDA Convention delegates only
Registration required *no later than August 1, 1985*

☐ Custom staining of resin restorations	$250.00	
☐ Custom staining, porcelain crowns	$150.00	
☐ Emergency office procedures	$150.00	
☐ Hydro colloid techniques	$150.00	
☐ Basic Endodontics	$150.00	
☐ Computerization	$150.00	
☐ Clinical photography	$150.00	$ _____
☐ Quality Control in X-Rays	$150.00	

Convention Registration (September 29–October 2, 1985)

(Please complete appropriate category)

Dentist
General Practitioner
Specialist _____ (Specialty Group)

	to Aug. 1	after Aug. 1	
CDA Member/foreign dentist	$210.00	$250.00	
Non-member	$260.00	$300.00	$ _____

Includes access to scientific sessions & exhibits, three lunches, Sunday registration party and Tuesday Bytown Bash.

Spouse

Dental spouse $110.00 $ _____
Includes access to scientific sessions and exhibits, Sunday registration party, Monday fashion show and lunch, Tuesday tour and Bytown Bash, Wednesday lunch

Hygiene spouse $ 50.00 $ _____
Includes access to scientific sessions and exhibits, sponsored Sunday river cruise (pre-registrants – limited attendance), Registration party/Monday lunch and CDHA Casino night.

Hygienist

Full Registration	**to Aug. 1**	**after Aug. 1**	
CDHA Member	$110.00	$120.00	
Non-member	$220.00	$240.00	$ _____

Includes access to scientific sessions, and exhibits, sponsored Sunday river cruise (pre-registrants—limited attendance), Registration Party, Monday lunch and Casino night, Tuesday lunch and Bytown Bash, Wednesday brunch.

Daily Registration

CDHA Member	$ 50.00	$ 60.00	
Non-member	$100.00	$120.00	$ _____

Day(s) attending _____

Includes that day's scientific sessions, exhibits and luncheon or brunch.

Assistant/Office Personnel

Full Registration

CDAA Member	$100.00	$110.00	
Non-member	$130.00	$140.00	$ _____

Includes access to scientific sessions & exhibits, Sunday city tour, Registration party, Monday lunch and Casino Night, Tuesday Bytown Bash, Wednesday Breakfast and tour.

Daily Registration

CDAA Member	$ 50.00	
Non-member	$ 60.00	$ _____

Day(s) attending _____

Includes that day's scientific sessions, exhibits.

Student

Dental — complimentary
Hygiene — complimentary

Assistant —	$ 10.00	$ _____

Day(s) attending _____

Includes scientific sessions and exhibits only.

Technician

$ 50.00 $ _____

Includes scientific sessions and exhibits only.

Other

$ 75.00 $ _____

Includes scientific sessions and exhibits only.

Additional Social Tickets

Sunday Registration Party	$20.00 pp	$ _____
Monday President's Ball*	$45.00 pp	$ _____
Monday CDHA Dancing/Casino/Cabaret Night	$10.00 pp	$ _____
Tuesday Bytown Bash	$40.00 pp	$ _____

*(not included in Registration package)

Total Amount of Enclosed Cheque $ _____

Make cheque payable to the **Canadian Dental Association** and mail to:
1985 CDA Convention
1815 Alta Vista Drive, Ottawa, Ontario. K1G 3Y6

Cancellation Policy: Cancellations are accepted in writing before September 1, 1985 for a full refund. Requests received after that date are subject to a 25% administrative charge.

*Please duplicate and complete this form if more than one registration is required.

HOTEL RESERVATION FORM

Name _____
(Please print or type)

Address _____

_____
City Province Postal Code

Telephone No. (Res.) _____ (Bus.) _____

Please Check Appropriate Designation

☐ Dentist
☐ Specialist _____
(Please list specialty group)
☐ Hygienist
☐ Assistant/Office Personnel
☐ Exhibitor
☐ Technician
☐ Student
Other (please specify) _____

Type of Room

☐ Single ☐ Double ☐ Twin ☐ Triple ☐ Other _____

Indicate first three hotel choices (Rates indicated single/double)

☐ Westin (CDA & CDAA Headquarters Hotel) ($89/$95)
☐ Chateau Laurier (CDHA Headquarters Hotel) $85/$95)
☐ Four Seasons ($85)
☐ Skyline ($80/$90)
☐ Holiday Inn, Ottawa Centre ($80/$90)
☐ Holiday Inn, Market Square ($50/$55)
☐ Delta ($80/$90)
☐ Roxborough ($57/$62)
☐ Lord Elgin ($50/$55)
☐ Plaza de la Chaudière ($90/$105)

Arrival _____ Time _____ Departure Date _____
Name(s) other occupant(s), if applicable _____

Please Note: A $75.00 deposit fee is required, payable to the **Housing Bureau, CDA Convention**

Please send deposit and hotel reservation form to:
The 1985 Ottawa Convention
c/o Ms Margot Rayburn
Canada's Capital Visitors and Convention Bureau
222 Queen Street, 7th Floor
Ottawa, Ontario. K1P 5V9
Deadline for reservations: August 28, 1985

PRESIDENT'S COLUMN

by Dr. Ralph Crawford

SERVICE

Many (too many!) years ago when I was a boy, my Mother used to remind me that our hands were indicative of the manner in which we handled our lives. She would say that there were five things we could do with our hands . . . .

1. we could wring them in despair.
2. we could clench a fist and shake it in anger.
3. we could fold them in our lap in apparent contentment.
4. we could staff them in our pockets and do nothing.
5. we could out-stretch them in the service of others!

As a young lad, such philosophical advice was often a puzzlement but now, years older (and hopefully much wiser) – and in a profession where hands are so very important – I realize only too well that the wisdom of our elders was so very profound. The meaning of Life and the ultimate satisfaction in our profession is Service to others.

My visitations to provincial and society meetings; the informational services with students; the dialogue with Councils and Committees and the numerous discussions with interested people from all walks of dental life indicate that the profession is beset with a multitude of problems – not always matched with easy solutions. Our attitudes in the handling of these concerns will determine our eventual destiny.

Take our manpower-busyness problem; the depressed economics; rising inflation; and striking of budgets – we could wring our hands in despair and say, "there's nothing we can do about it!". Obviously a non-solution. Pessimism, doom and gloom and crying on the shoulders of one another will do little that is constructive.

Political decisions (or non-decisions!) pertaining to taxation, professional management companies, the Canada Health Act, dental therapists, pension reform, etc., might cause anger and tempt us to shake a fist at the whole bureaucratic system. However, senseless anger and passion devoid of professionalism will garner few, if any, reasonable results.

Insidious and dangerous is the folding of hands indicating smug contentment. To selfishly view one's own well being with satisfaction, and ignore the plight of others is to be pitied. Since the practice is busy, the appointment book is full, the mortgage paid and the children educated, why should I worry about assignment, third parties, p.p.o.'s and capitation? Surely contentment in the state of lethargy is the antithesis of progress.

All too often, with our Associations, there is a stuffing of hands deep into pockets, indicating a "do nothing" attitude. It is a sign of apathy and this is always a danger to a well directed organization. There isn't a dental Association in the country that couldn't use an extra pair of hands to lighten a burden, to enhance a presentation or to strengthen a committee. When apathy is the disease which weakens the vitality of Associations, then we deserve to lose our hard won privileges in society.

Truly, the extension and symbol of open, helping hands is the sign of Service to our fellow man, and Service is a creative expression of self. If a person does not give something of himself to others he dries up, shrinks and peters out. Giving of one's self adds to the enjoyment of life.

Service expands the area of interests and gives a feeling of participating. This profession of ours is essentially one of Service and in any sort of Service there is much of the spirit of the Golden Rule. This day, let us reaffirm our intent, let us strengthen the associations which sustain our purpose; Stretch forth those hands in the Service of others.

"The highest of distinctions is the service of others" – King George VI at his coronation.

Let us strive for that highest of distinctions.

CANADIAN AND ONTARIO PUBLIC HEALTH DENTISTS WILL MEET

A joint meeting of the Canadian and Ontario Societies of Public Health Dentists will be held concurrent with the Annual Convention of the Canadian Dental Association.

The meetings will be held in the Chateau Laurier Hotel on Sunday and Monday, September 29 and 30.

Business meetings of the two organizations will take place in the Renaissance Room on Sunday morning, the CSPHD session from 8.30 a.m. to 10.15 and the OSPHD meeting from 10.30 to noon.

At noon, a light lunch will be served for members and invited guests in the Tudor Room. (Included in registration).

Later on Sunday, there will be presentations by CSPHD/OSPHD members and Provincial Dental Health Directors, in the Renaissance Room.

On Sunday evening, a "Meet and Greet" event has been scheduled, where members of both societies and their spouses, with invited guests, will have an opportunity to enjoy the social occasion. The CSPHD will play host.

On Monday morning, September 30, there will be a presentation by Dr. Harry Bohannan on the Woods Gordon Report, followed by a reactor panel, in the Renaissance Room.

A sit down lunch has been arranged, in the Macdonald Room. (Included in registration).

The Murray Hunt Lecture may be presented in the Monday afternoon session and/or scientific papers from society members.

CDSPI AND YOU WHAT WOULD YOU DO?

Imagine that you have just been appointed by your peers to a committee responsible for creating and maintaining an insurance program for your profession. You would, no doubt, feel a great sense of responsibility and challenge. You would set out to create a program responding to the needs of your profession, incorporating the best the insurance industry has to offer. If you did this, you would end up creating the Canadian Dentists' Insurance Program (CDIP), because the CDIP is just that – a program developed by dentists with the best insurance policies and premiums available, in a package uniquely designed for dentistry.

The CDIP has been evolving for many years, with important decisions being made along the way by dentists like yourself. Some of these decisions are examined below.

How Broad in Scope Should this Program Be?

When the CDIP began, it was on a much smaller scale, and few people envisioned the type of Program that exists today. However, as the Program grew in strength, and the dentists decided they wanted a more comprehensive program, new plans were incorporated. Today, the CDIP offers nine separate insurance plans, protecting Life, Disability, Office and Liability needs. It is the most comprehensive program available to any professional group in Canada.

How Could the Program Be Made to Differ from Private Plans Available?

The first step in differentiating the CDIP from plans available "on the street" was recognizing that there are definite insurance needs and situations shared by most dentists, but not necessarily shared by other professions. The insurance plans were then designed accordingly, with contract and policy provisions to meet these special needs.

For example, the flexibility of coverage options in the office plans was built in to accommodate the many unique variables dentists are likely to encounter in associateship and partnership arrangements.

The program also differs in the area of control. With a private plan, the dentist is on his/her own. With the CDIP, the dentist is supported by the strength of CDSPI, and the national and provincial dental associations.

How Do You Make Your Program One of the Best Available?

Quite simply, you do this by not being willing to settle for anything less than the best.

When developing the CDIP, the dentists of Canada engaged the services of top professional consultants and advisors and entered into extensive negotiations with the insurance companies. The results were exceptionally high coverage limits, broad-form contracts, and special policy provisions not otherwise available. For example, the CDIP is, to our knowledge, the only professional program which allows participants to insure up to 100% of pre-tax income in the event of a disability.

The "Loss of Use of" provision under the Accidental Death and Dismemberment plan is also a unique benefit negotiated to protect the special physical requirements of the practice of dentistry.

Constant review and upgrading of the CDIP ensures that the special advantages of the Program are maintained and that every opportunity to improve the Program further is utilized.

With All These Benefits, How Do You Keep the Premium Costs Low?

"You get what you pay for, right?" Not always! With the CDIP you get more than you pay for! You get benefits, high level service, and the input of the dental profession. Even with all these added benefits, the CDIP has always been able to keep premiums extremely low. CDIP's Long Term Disability premiums are currently up to 60% lower than private carriers.

Such low premiums have been made possible through aggressive negotiations with the insurers based on the strength created by the large number of participants covered by the Master Contracts and Agreements. Constant monitoring of claims experience helps the CDIP to maintain these premiums. In fact, 1985 premiums for Malpractice Insurance are 8% lower than 1984 premiums, and the 1985 Non-Smoker premiums have been reduced up to an additional 28%.

How Do You Ensure High Quality Service?

By creating an organization devoted solely to serving dentists' insurance needs, you and your fellow dentists have ensured that you will always have access to excellent service.

Canadian Dental Service Plans Inc., (CDSPI), offers a complete insurance service, including a toll-free Central Information Service for answers to any insurance question, assistance with applications and claims, as well as free evaluation and commentary on private insurance proposals or existing policies.

All telephone calls are handled by trained Service Representatives who have access to your files and the services of professional consultants and insurers, as required.

IT'S YOUR PROGRAM — BE PROUD OT IT! USE IT!

INCORPORATION BY DENTISTS ENDORSED BY B.C. COLLEGE

Incorporation is beginning to attract the attention of dentists in various parts of Canada, because they believe the activities of Revenue Canada are making the viability of management companies very questionable.

In British Columbia, the attraction of incorporation has reached the extent where the Executive Council of the College of Dental Surgeons, following a detailed study of the situation, has invited applications from member dentists who wish to incorporate.

It has been possible to incorporate dental practices for some time in that province, under Section 72 of the British Columbia Dentists Act.

Professional responsibility

Carefully drafted application forms were prepared by the B.C. College late last year and were made available to member dentists before the year end.

The Dentists Act allows incorporation of dental practices if the College gives its approval. Also, the British Columbia Company Act would allow the dentist the protection of limited fiscal and professional liability upon incorporation.

The College, however, in approving incorporation, believed the dentist-applicants should agree to remain fully responsible for all debts, obligations, professional acts or misconduct.

Dentists have also been asked to use the principal's surname in their incorporated practice's new "company" title. This would make the practice more identifiable to the public.

Therefore, when the dentist signs the incorporation application form, he must also sign a compliance, agreeing to the foregoing conditions. These conditions would provide legal recourse in disputes about professional services performed by dentists employed by the "company."

Conditions also stipulate that the company must employ members of the College, in good standing, and that only members may hold shares in the company.

Approval by College

Initial approval of applications may only be granted by the College. Conversely, the College retains the authority to terminate a corporation if a dentist is found guilty of a breach of the conditions of incorporation, any conditions of the Dentists Act, the Code of Ethics of the College or is, for any reason, suspended from membership in the College, or no longer holds a licence to practice dentistry in British Columbia.

Dentists urged to consider

The College has also recommended careful consideration of the matter before applying for incorporation. it was pointed out that circumstances may vary greatly from practice to practice, and, although the major advantage of incorporation is taxation benefit, this may vary considerably according to the size and present structure of the prac-

tice. The College has instructed the would-be applicant to sit down with his or her tax advisers to determine whether the advantages are sufficient to warrant the change in status.

By late January, the number of applications received by the College indicated a lively interest in the provision, according to Ken Croft, Managing Director of the B.C. College.

Provision in Alberta

The only other province in Canada with amended provincial legislation allowing incorporation by professionals, is Alberta.

In Ontario, the Business Corporations Act stipulates that: "where the practice of a profession is governed by a separate act (in this case, the Health Disciplines Act for dentistry) a professional corporation may practice the profession only if the Act expressly permits it." The implication is, that if an Ontario-based dentist wishes to benefit from the advantages of incorporation, the province's Health Disciplines Act would first have to be amended accordingly.

In the early 1970s, several professional groups in the Province of Alberta made it known to their legislators that the pertinent acts should be amended to allow incorporation by dentists, physicians, lawyers and accountants.

The necessary amendments were enacted in 1975.

Incorporated dental practices now number about 700, or "close to two-thirds of our membership," according to Dr. B.P. Martinello, Executive Director and Registrar of the Alberta Dental Association.

On way to 'extinction'

Because the tax advantage aspect of management companies appears to be evaporating, Dr. Randy Lang, a past president of the Ontario Society of Orthodontists wrote recently that they "will soon join the dinosaurs and Edsels, in extinction." He believes it to be both "sad and unfair" that everyone in the other eight provinces of Canada has the right to incorporate his or her business, except a few professionals.

He has urged Ontario's dentists to lobby through their provincial dental association and licensing body to seek revision of the act that would permit incorporation and "remove discrimination" against these professionals.

Precedent in B.C.

It was noted by the College of Dental Surgeons of British Columbia that the College of Physicians and Surgeons of that province had already taken the step and allowed a number of medical practitioners to incorporate.

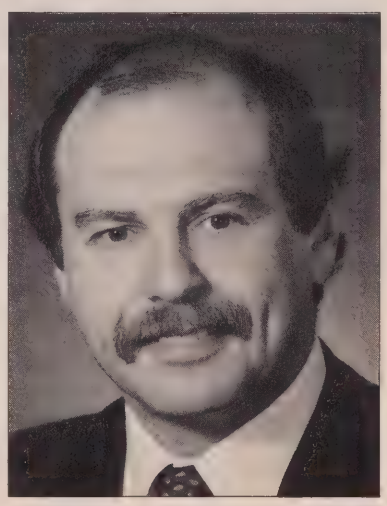
CFDE INCOME REACHES RECORD LEVEL IN 1984

Dentists across Canada led the way to bring the CFDE income in 1984 to a record level – $281,£50 – or 9 per cent above the 1983 figure.

Fund Chairman Dr. David Peters said recently that "personal gifts from dentists of close to $92,000 were the Fund's largest single source of income, and 15 per cent more than in the previous year.

"Substantial increases were also recorded in support from dental organizations, totalling $26,500 and gifts to the Living Memorial Fund of $19,500," Dr. Peters reported. Also, there were many donations received as tributes to the late Murray McDonald, "primarily the reason for the all-time high in memorial contributions," he said. "Support from our friends in business and industry reached the fine total of $77,400.

"We at CFDE are proud of this record amount in income and deeply grateful to all whose generous help made it possible. It will enable the Fund to do even more for the benefit of the profession and the public in 1985," Dr. Peters concluded.



Dr. Les Allen

DR. LES ALLEN INSTALLED AS MDA PRESIDENT

Dr. Les Allen of Winnipeg was installed as the 61st President of the Manitoba Dental Association at the 101st annual meeting, held January 25th and 26th in Winnipeg.

Dr. Allen is a 1969 graduate of the Faculty of Dentistry, University of Manitoba and has been in private practice in Winnipeg since his graduation.

Dr. Allen's presidency establishes a precedent for the Manitoba Dental Association. His father, Dr. Harvey Allen, with whom he has been associated since graduation, served as the 40th President of the MDA in 1963-64. This is the first time that a father and son have both been presidents of the MDA.

In 1965, Dr. Allen also received a Bachelor of Commerce degree from the University of Manitoba. He taught Endodontics part time at the Faculty of Dentistry at his alma mater and had served on the Peer Review Committee of the Manitoba Dental Association prior to his election as a member of the Board of Directors, two years ago.

Other members of the MDA Board are: Dr. Ted Hechter, of Winnipeg, Past-President; Dr. Orville Heschuk, of Dauphin, Vice-President; Dr. Ernie Cohen, Dr. Bryan Pearson and Dr. Ken Skinner, all of Winnipeg and Dr. Joe Stasiuk of Portage la Prairie. Ms. Barbara Pirt of Winnipeg is the Auxiliary Representative on the Board and Dr. Harvey Short of Winnipeg, is the appointee of the Manitoba Minister of Health.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on February 28, 1985.

Common Stock Fund	$88.57262
Fixed Income Fund	$43.07262
Money Market Fund	$30.93608
Balanced Fund	$17.36490

Total assets (market value) of the plan were $42,531,812.

The previous month's figures, as of January 31, 1985, stood as follows:

Common Stock Fund	$81.09177
Fixed Income Fund	$42.84646
Money Market Fund	$30.53434
Balanced Fund	$26.75006

Total assets (market value) of the plan were $40,620,421.

For further information write to: Canadian Dental Service Plans Inc., Ste. 600, 2 Lansing Square, Willowdale, Ontario M2J 4Z3 or call the central information services of CDSPI at 1-800-268-5418 (toll free number for Western Canada, Atlantic Canada and Ontario for Code 807 only, 1-800-268-3411 (toll free number for Quebec and Ontario except Code 807), and 497-7117 (Metro Toronto area).

Briefly

The Etobicoke Dental Division of the Etobicoke Health Department (in a suburb of Toronto, Ont.) has won a big feather for its cap.

It has received a Recognition Award for placing among the top five finalists among 132,000 dentists and dental organizations around the world.

Dr. Samuel Green, director of community dentistry and his staff received the award from the American Dental Association's Council on Dental Health and Health Planning, for the Etobicoke unit's contribution to community preventive dentistry.

The honor was as a result of an article written by Dr. Green in the spring of 1984, which was published in Ontario and was also sent to the American Dental Association as an entry in the competition. The article explained such preventive programs as the Tooth Fairy Society, the Dental Gum Massage Program and the Thumb Suckers Anonymous Program.

The dental division in Etobicoke has a staff of nine, including dentists, hygienists, health educators and the director, Dr. Green.

The National Dental Examining Board recently appointed a new Executive for 1985.

Dr. R.B. Gilliland, of Saskatoon, Saskatchewan is the new President of the NDEB, while Dr. H.M. Dick is Vice-President. Immediate past-president is Dr. W.J. O'Driscoll, while Dr. Gundega Kravis continues in her role as Registrar. Executive Secretary-Treasurer continues to be Mrs. F. Dawes.

Corning Wear teeth? *Corning Glass* Works has developed practically indestructible plates from a process that crystalizes glass into ceramics. When the chemical composition is altered, the physical properties of the ceramics may be varied. Enter an innovative dental technician from Boston, Peter J. Adair, who approached the Corning people with the idea that glass ceramics could possibly be used to make dental crowns and bridges.

About five years later, *Dicor Pyroceram* is being introduced to the market in the United States. Dentists who have used it feel that the new compound may revolutionize the procedure.

In the process, a wax replica of the tooth in question is sculpted. The wax tooth is then put into a liquid which hardens around it to form a mold. The hot liquid glass is then poured into this mold. The wax model melts in the heat and the glass fills the impression that is left. The mold is then broken open to reveal the glass tooth. The clear glass tooth is heated to 1,960 degrees F. and crystalizes to become glass ceramic. The result is a translucent white tooth which can be painted the same color as the surrounding natural teeth.

Dentists who have used the new process claim that plaque does not appear to cling to these ceramic teeth. Experiments have been conducted, but there has been no success trying to get bacteria to grow on them.

An Edmonton, Alberta dentist, Dr. David M. Vassos, was recently elevated to Diplomate status within the *International Congress of Oral Implantologists* (ICOI).

Diplomate status is the highest award a dental professional involved in the field of Oral Implantology can receive from the ICOI.

The ICOI is an international professional and scientific organization dedicated to the training and study of Oral Implantology. For further information contact: Mr. Clifford J. Kirschner, Executive Director, The International Congress of Oral Implantologists, P.O. Box 2277, Grand Central Station, New York, New York, 10163, USA.

Dr. D.L. Thompson, of Calgary Alberta, a past-President of the *Alberta Dental Association*, has assumed a new role with that Association. Dr. Thompson is now the Editor of the Alberta Dental Association News, a monthly Association newsletter.

Dr. Thompson has also, for many years, been active with the Canadian Dental Association, holding positions on the Councils of Dental Materials and Devices, Ethics, Hospital Services and Education. He retired as a senior member of the CDA Board of Governors in September 1984.

Dr. D.L. Thompson

The Canadian Dental Association will once again be actively participating in this year's Ontario Dental Association Annual Meeting. The ODA meeting complete with a large exhibit space, an extensive scientific and a lively social program, will take place May 12-15 in Toronto's Sheraton Centre Hotel.

This year's CDA booth will feature more material of interest to all dentists than ever before. Interested ODA delegates can stop by the CDA booth for copies of the "National Dental Health Checkup", a supplement which appeared in the early April issues of both Maclean's magazine and L'Actualité. The Checkup was a major item in the launch of CDA's Dental Awareness Program.

Along with this special supplement, more information on the Dental Awareness Program will also be available.

This year's CDA booth will also feature promotion material on the CDA national convention, scheduled to be held in Ottawa September 29 to October 2, 1985. Both buttons and information on the program will be available. Buttons promoting the Dental Awareness theme of "Good For Life" will also be available.

Whether ODA delegates want information, dental health pamphlet samples, buttons for collectors or just to stop by and rest a while, the CDA booth is the place to be, May 12-15 in Toronto.

In a recent interview with a Saskatoon newspaper, Dr. George Peacock, Registrar of the College of Dental Surgeons of Saskatchewan said competitiveness in that province among dentists has led to extended hours.

He said it was a return to the practises of the 1950s and 1960s "when Saturday openings were quite common." He noted that the dental "manpower situation is now enough that the profession is taking dentistry to the public more."

The number of dentists in Saskatchewan has jumped from 214 to 358 in the 10 years since the dental school has been operating at the University of Saskatchewan, he said. He noted that about 75 per cent of the dental graduates remain in that province.

Some dental offices remain open on certain nights of the week and one dentist has extended practice to Sundays.

Dr. Peacock said the College has no reservations about odd hours as long as the treatment provided is quality care.

The Academy of General Dentistry's new Certifying Board held its first meeting recently in Chicago. The board will offer a professional credentials to United States and Canadian dentists for use within the profession, and, as a AGD press release recently stated "as indication of a high degree of proficiency in general dentistry."

This first meeting was devoted almost exclusively to establishing appropriate legal and administrative structures for the new corporation. The board has planned to meet three times this year and hopes to be able to accept applications for educationally-qualified status sometime during 1986.

Although the Certifying Board will be independent of the AGD, the Academy is acting as its sponsor. AGD has loaned the new Board both money and staff for its initial operations until the Board can begin generating its own income from examination and application fees, in about 18 months.

An influential organization in the United States recently urged a military draft of physicians, dentists and other health personnel because "the current state of military medical facilities and manpower is such that the armed forces would be severely short of combat medical care if major hostilities erupted today or in the near future."

A report released by the *U.S. Heritage Foundation* said further that there should be "immediate action" to pass an amendment to the Military Selective Service Act which would enforce registration of all persons between the ages of 18 and 46 "who are trained in a health care occupation."

Between 1950 and 1973, about 30,000 physicians, dentists and other health professionals were conscripted under the so-called "doctor draft" legislation in the United States, according to the Foundation's report. Nearly all of these health professionals accepted reserve commissions on a voluntary basis in lieu of induction.

The United States Food and Drug Administration (FDA) has issued a new regulation which requires manufacturers and importers of medical and dental devices to report serious injuries or deaths which may be related to the device.

Such reports had been largely voluntary before the Dec. 13, 1984, effective date of the new regulation.

Under these terms, the dentist or physician who experiences a device malfunction has a number of options in reporting the incident. The report may be made to the manufacturer, to the FDA directly, or to the FDA Product Monitoring Branch.

The only devices exempt from the new ruling are those covered under the investigational device exemption and devices manufactured or imported by practitioners solely for their own use or for research or teaching purposes.

A brand new dental organization has been formed in the United States.

The *American Academy of Cosmetic Dentistry* held its inaugural meeting December 6-8, 1984 in Las Vegas, Nevada. The new President of the Academy is Dr. Jack Kammer. The first Board of Directors was requested to formulate a set of by-laws and design an accreditation program representing the Academy's avowed purpose to stimulate superior cosmetic techniques.

For more information on the Academy, contact, Dr. Jack Kammer, 2709 Marshall Court, Madison, Wisconsin, 53705, USA, telephone: 608-238-2300.

Hubert Drouin will assume new position

Mr. Hubert Drouin has announced his resignation, effective May 1, 1985. He will assume a new position, Executive Director of the Chemical Institute of Canada, a national organization based in Ottawa.

Mr. Drouin has been Executive Director of CDA since 1979 and in that capacity has been senior staff person responsible to the Executive Council and the Board of Governors. He has been instrumental in the coordination of the numerous programs of the ten Councils and eight Committees of CDA. On behalf of the Association he served as a Trustee of the Canadian Fund for Dental Education, and as a member of the Canadian Standards Association.

In recent years Mr. Drouin has been actively involved in CDA's newest developments, including changes to the Journal format, the Dental Awareness Program and the Association's Resource Centre. In 1984 Mr. Drouin gained the designation of Certified Association Executive from the Institute of Association Executives.

At the recent Interim Board meeting, held in Ottawa on March 8th and 9th, President Ralph Crawford, on behalf of Executive Council and the Board of Governors, warmly thanked Mr. Drouin for his loyalty and dedication over the past six years. The Board, Journal Editors, staff at CDA Headquarters, and numerous associates in the profession extend to Hubert and his charming wife Diane, sincere best wishes in their future endeavours.

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Letters

DENTAL NETWORK

I recently enjoyed reading the article entitled 'The Dentist On-Line' in the December issue of the Journal.

I have been utilizing Medline, Dialog, Knowledge Index, and the Source for about 3 years now and can not imagine attempting to stay current with health information any other way.

Of special interest to busy dentists may be the availability of SDI searches of Medline. These 'Selected Dissemination of Information' searches update a previously refined and completed search of the medical/dental literature on a monthly basis as new citations are added to the index. These new references are mailed directly to the user.

Additionally, I thought it would be of interest to the profession that a free computer network, database, electronic mail and bulletin board service is available through the Ontario Dental Network. This network is for the exclusive use of those working in the dental profession. Passwords and access telephone numbers are available free of charge by writing the following address.

Ontario Dental Network
777 Bay Street, Box 111
Toronto, Ontario
M5G 2C8

Peter E. Copp, DDS, BScD

Editor's Note: *Two other bibliographic sources for use by dentists and physicians who are on-line are: BRS Colleague, contact: BRS/Saunders, Colleague, 1200 Route 7, Latham N.Y., 12110, USA and Knowledge Index: Contact: Micromedia Ltd.,/ DIALOG, 144 Front St. W., Toronto, Ont., M2J 2L7. Both systems are directly accessible through Datapac.*

STILL ENJOYS JOURNAL

I am still enjoying the Journal as much as ever and wish you every success in the future.

Dr. Frank A. Edward
Fort Meyers, Florida

MANY FLYING DENTISTS

I enjoyed reading the article ''Flying and Dentistry'' in the February 1985 issue of your Journal under heading ''Dental Hobbies''.

I am certain that Dr. Deedrick is only one of many Dentists who enjoy flying as hobby. In fact I am pleased to inform you that the National Chairman of the Royal Canadian Flying Clubs Association is a Dentist. Dr. Don Steeves of Moncton N.B. has served the RCFCA in many capacities for several years as well as being active on the Board of Directors of the Moncton Flying Club.

I hope that your article will lead many of your readers to take up flying and discover the joy of flight. I would be pleased to provide information to any of your readers should they wish to look into flying as a hobby.

Howard P. Goldberg, President,
Royal Canadian Flying Clubs Association

ANNIVERSARY EDITION-'TERRIFIC'

The Anniversary issue looks terrific – congratulations! However, a small correction is requested concerning my article. The error did not originate in Halifax, because I do not ''head'' the Division of Removable Prosthodontics.

With best regards.

O. Sykora, DDS, PhD
Division of Removable Prosthodontics

'JOB WELL DONE'

Allow me to congratulate you on the January issue of the Journal, which I have just received. It is a job well done.

Although I have now been retired for three years, after fifty-five years in practice, I still like to keep in touch.

William Miller, DMD.
West Vancouver, B.C.

Book Reviews

CLINICAL PRACTICE OF THE DENTAL HYGIENIST

Esther M. Wilkins

Lea and Febiger, 1983,
Philadelphia, PA
$47.00,
913 pgs.

The author in the fifth edition of this leading text maintains the format which has long provided the student and practicing dental hygienist with comprehensive information and quick reference. Concepts continue to be presented in the clear, sequenced format the author has utilized in earlier editions.

This edition is divided into the same six parts as the previous one. Chapters have been added, sub-divided and one deleted resulting in over one hundred additional pages of current information. The prevention of disease transmission is now covered in two chapters with more emphasis on clinical application. The chapter concerned with patients with a disorder of the circulatory system has also been expanded and rewritten into two chapters: patients with cardiovascular diseases and patients with a blood disorder. New chapters discuss gingival and periodontal pockets, treatment of acute gingival conditions, finishing and polishing amalgam restorations, the edentulous patient and care and management of patients with disabilities.

All chapters have been updated with considerable expansion in some areas, particularly in the chapters on indices and scoring devices. A discussion on child abuse has been added to patient evaluation. Information on patient and operator safety has been expanded in topics such as disease transmission, use of safety glasses, limitations of ultrasonic instrumentation, selective polishing, bacteremia and patients at risk.

Part VI recognizes current population trends and the responsibilities health professionals have to patients with special needs. Chapters have been rewritten and added. Treatment of the patient with a fractured jaw is described as well as treatment for the patient with epilepsy. Autism is discussed. A finger spelling chart is provided for the hard of hearing patient. The new chapter on the edentulous patient emphasizes the need for preventive measures to ensure general and oral health. Another new chapter, care and management of patients with disabilities notes the uniqueness of the handicapped patient and describes how routine procedures can be modified to minimize oral problems. This chapter includes illustrations of self-care aids and a section on group in-service.

Several chapters provide factors to teach patients which encourages patient education. Some list technical hints whereby additional sources of information and materials can be obtained. More illustrations have been included. References and suggested readings are current, some as recent as 1981.

The author continues to provide dental hygienists with a reference basic and fundamental to dental hygiene practice. The extensive information and references provided in the text makes it a valuable resource for all dental and dental auxiliary students, educators and practising members of the dental community.

This book was reviewed by
Margaret E. Miller, R.D.H., B.A.
C.D.H.A. Education Committee
Chairperson

OCCLUSION: THIRD EDITION

Sigurd Ramfjord and
Major M. Ash

WB Saunders Co. Canada Ltd.
Toronto, Ont.
$38.35, 544 pgs.

The dental clinician with sufficient experience cannot help but be continually impressed with the many areas of the stomato-gnathic system influenced by the dental reference of the mandibular articulation. It should then not go unnoticed when a new edition of a venerable book by Doctors Ramfjord and Ash, devoted to occlusion *in its widest context*, is published.

The book is organized into four sections in a classical arrangement, not unlike the dental curriculum in many schools, of normal to abnormal to diagnosis to treatment and through understanding – ultimately to prevention. Each chapter is followed by a reference section enlarged by at least one third over earlier editions, containing recent research and source material. The relative stability of the chapter on occlusion adjustment in quality, and its reference list in quantity, however, should provide comfort to those practitioners who have followed the guidelines outlined therein over the years. For the graduate student, the historically comprehensive reference list should allow for a better appreciation based on earlier work of the present nature of treatment modalities and future trends likely to occur.

In the twelve years since the publication of the second edition there appears to have been a subtle shift in the practice of dentistry from the more practical and technical to the theoretical and empirical culminating it seems in a quixotic interest in masticatory pain and dysfunction. One is continually reminded of the complexity of the stomatognathic system and the proximity of the CNS and psyche which often makes a diagnosis of the system gone awry difficult even for those who specialize or devote much of their practice to the MPD conundrum. Instances arise when the clinical symptoms of the patient point in the direction of treatment, the cause largely baffling even the most astute observer. A readable clinical reference book is essential to the practitioner who will deal with individuals suffering from MPD, whose numbers appear to have increased, and "Occlusion", written for practitioners, covers this one aspect of the problem in great detail.

Other professional publications can be consulted to augment the material in this book. There appears to be a consensus that many oral structures, e.g. periodontium, can show evidence of trauma from occlusion that can be reversed or improved by occlusal adjustment but one could argue that the diagnosis of stomatognathic or masticatory trauma from occlusion involving muscles, joints and other structures based on symptoms and signs is too simplistic and take academic umbrage to the statement on page 246 that ". . .dysfunctional symptoms in the overwhelming majority of cases will abate by occlusal therapy" and later ". . . on the other hand, such disturbances (functional disturbances of joints and muscles) can unquestionably be eliminated in the overwhelming majority of cases by removal of occlusal interferences".

The student in us all is left with the urge to rush off to the nearest library to read the associated reference articles that will cor-

roborate these statements. This is no bad thing for no matter whether one ultimately agrees or disagrees clinically or philosophically, it has been said that "argument amongst good men is but knowledge in the making". And yet, how divisive is the whole concept of occlusal adjustment with opponents and proponents locked in seemingly irreconcilable professional battle. It might be said that it is possible to justify a modality of treatment based on clinical experience and the principle of 'primum non nocere', i.e. the patient improves and no harm is done. If occlusal adjustment causes masticatory symptoms to abate, who can fault the premise, and if Doctors Ramfjord and Ash, with many years of successful clinical experience, seek to delve into the intricacies of occlusion trying to provide explanations of an improved clinical picture based upon occlusal adjustment and the reported literature, and who publish a book on their efforts and interpretation, we should not find fault for knowledge is in the making.

For those in dentistry who hold that there is value in a thorough understanding of occlusion, its relationship to the stomatognathic and related systems and in occlusal adjustment, there is no book more thoroughly researched, better written and illustrated, at the price, than "Occlusion", third edition by Sigurd Ramfjord and Major M. Ash.

This book was reviewed by
Dr. James Stakiw, Chairman
Div. of Periodontology University
of Western Ontario, London, Ontario.

CORRECTION

The book reviewed in Vol. 50, No. 12 (December 1984) entitled "Comprehensive Dental Hygiene Care" was published by ***C. V. Mosby Co.****, St. Louis Missouri. The publisher was inadvertently left out of the book review.*

STRESS: THE DILEMMA OF SUCCESS

James M. Dyce

Stess Publications, 1982
Lavenham, Suffolk, England
$26.00 U.S. 176 pages.

By the time I had struggled my way to the seventh chapter I was not particularly surprised at the inclusion of a comment offered by the President of the General Dental Council shortly after his arrival as one of 80 guests invited to a dinner arranged by the author and his colleague to permit them to deliver an address on 'Marxism and Medicine'. "Jimmy," Sir Wilfred Fish is acknowledged by the author to have said, "are we going to have Moral Re-Armament to-night? If so, I'm going home!" I should have taken the cue. But an obligation undertaken is not lightly to be disregarded! So for another 90 odd pages I groped to the end of an activity constituting for me, a veritable manifestation of the book's title, "Stress: The Dilemma of Success."

That I neither enjoyed the book nor derived benefit from a reading of it is, I suspect, already obvious. Perhaps there was an unreasonable expectation given my high regard for the adviser to the thesis, Dr. Harold Hillenbrand, Executive Director Emeritus of The American Dental Association, who, in the Foreword, was almost glowingly laudable in his praise of the text. And although one must have nothing but praise and approbation for a colleague who, in the twilight of his professional career, enters a prestigious university to undertake the formal study of philosophy for several years, it was difficult for this reader to escape the impression he was being exposed to anything more than a copious array of rather disjointed lecture notes interspersed with well-meaning but not particularly effectual observations and comments. Perhaps, too, had I known more of Moral Re-Armament, to the tenets and programs of which the author appears to be prosletizingly devoted, I could have more greatly appreciated the message he has, rather turgidly, laboured to impart.

In dentistry, according to the author, there are three phases of development we are obliged to explore. The first is our advance as perfectionists; the second, our acceptance of our social responsibilities. The third is "our understanding of the hostile world out there to which we must bring core truth". Although enormously difficult to discern from the book's content, one gets the impression that the search for and the practical application of "core truth" is the appropriate reaction to stress which the author defines as "our response to challenge in life". Perhaps it is. But for me I shall continue to run a bit, swim a little, violate the keys and drawbars of an electric organ, read a good book, or go dancing with my wife. And not necessarily in that order!

This book was reviewed by
Dr. Wesley J. Dunn
Div. of Community Dentistry
University of Western Ontario,
London, Ont.

OBITUARIES/NÉCROLOGIES

CALLAGHAN, W.: Dr. Callaghan, a native of Minto, New Brunswick, was a Life Member of the Canadian Dental Association. He graduated from McGill University in 1955.

DIXON, Harold W: of Moose Jaw, Saskatchewan, formerly of Regina. He practiced dentistry in Cabri for five years, then moved to Regina in 1925.

DURAND, M.: Né en 1889 et diplômé de l'Université de Montréal en 1915, le Dr Durant était membre permanent de l'Association dentaire canadienne.

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Add a special coating to further facilitate swallowing

Now you have all the clinical advantages of the leading extra strength analgesic with an important added benefit

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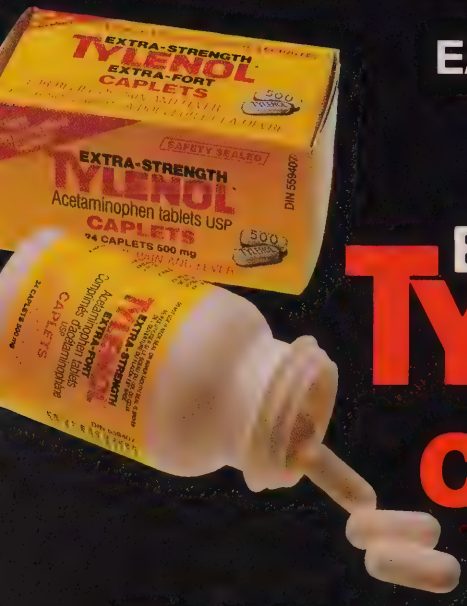

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CAPLETS

When more than a standard analgesic dose is required and ease of swallowing is a factor

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See prescribing information page 314

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Canadian Fund for Dental Education

Fonds canadien pour l'enseignement dentaire

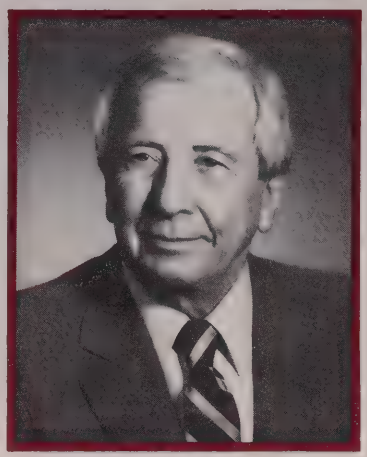
Annual Report
Honour Roll

1984

Rapport annuel
Tableau d'honneur

Murray McDonald

1912 – 1984



The Canadian Fund for Dental Education, its Trustees and friends have suffered a most grievous loss in the passing on June 9, 1984, of Murray McDonald, the man who exerted such a profound influence on shaping the Fund's form and destiny since 1967. Under his capable and sensitive leadership CFDE grew from a humble beginning into an organization that has now provided close to two million dollars in support of dental education, research and service.

After a distinguished career with Wrigley Canada Inc., Murray joined the dental profession in 1967, serving as Executive Director of CFDE for fifteen years and as Consultant to the Fund from 1982 until the time of his death. Murray also held the office of Comptroller of the Canadian Dental Association from 1967 to 1975, and all of us who worked with him during that time will readily attest to the significant contribution he made to dentistry in that capacity.

In recognition of his outstanding service to the profession, Murray was inducted as an Honorary Fellow into the International College of Dentists (only the second lay person to be accorded such honour), he was made an Honorary Member of the Canadian Dental Hygienists' Association, and the Canadian Dental Association paid tribute to him by bestowing on him posthumously its Distinguished Service Award. The Trustees of the Canadian Fund for Dental Education will, at their 1985 annual meeting, discuss how best CFDE can honour Murray and perpetuate his memory.

Murray McDonald was one of the most personable and gifted people ever associated with the dental profession in Canada. He earned the respect and esteem of all who knew him, within our profession and beyond, and the unequalled number of gifts to the Fund received in his memory is testimony to that respect.

These words from the closing scene of Julius Caesar, spoken by Antony in reference to Brutus, provide a fitting epitaph for Murray McDonald:

His life was gentle and
the elements so mixed in him
that nature might stand up and
say to all the world
THIS WAS A MAN!

David K. Peters

Le Fonds canadien pour l'enseignement dentaire, ses fiduciaires et ses amis ont subi une perte cruelle lors du décès, le 9 juin 1984, de Murray McDonald, l'homme qui exerçait une si profonde influence sur la structure et le destin du Fonds depuis 1967. Sous sa direction judicieuse et sensible, le FCED s'est développé à partir de ses humbles débuts pour devenir un organisme qui a contribué près de deux millions de dollars à l'appui de l'enseignement, de la recherche et du service dentaires.

Suite à une carrière distinguée avec Wrigley Canada Inc., M. McDonald s'est joint aux rangs de la profession dentaire en 1967. Il assuma le poste de Directeur exécutif du Fonds pendant quinze ans, pour devenir Conseiller de 1982 jusqu'à sa mort. Il occupa également le poste de Contrôleur de l'Association dentaire canadienne de 1967 à 1975 et tous ceux d'entre nous qui ont collaboré avec lui pendant cette période peuvent confirmer l'envergure de sa contribution à la profession dentaire.

En reconnaissance des services exceptionnels qu'il rendit à la profession, Murray McDonald fut nommé membre honoraire du Collège international des dentistes (le deuxième non-dentiste à remporter cet honneur) et membre honoraire de l'Association canadienne des hygiénistes dentaires. L'Association dentaire canadienne lui rendit hommage en lui accordant, à titre posthume, Le Prix pour services émérites. Lors de leur assemblée annuelle pour 1985, les fiduciaires du FCED décideront comment le Fonds pourra aussi rendre hommage à M. McDonald et perpétuer ainsi son souvenir.

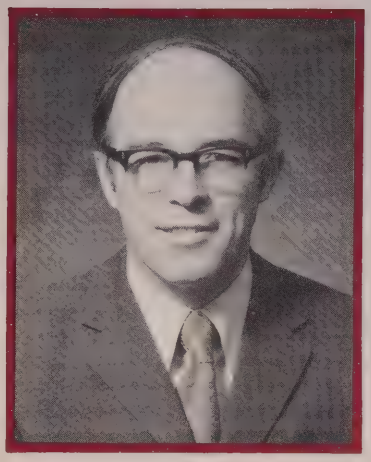
Peu de personnalités associées avec la profession dentaire au cours des années ont fait preuve d'autant de talent et d'une aussi grande prestance que M. McDonald. Il a gagné le respect et l'estime de tous ceux qui le connaissaient, au sein de la profession et ailleurs. Le nombre incomparable de dons reçus par le Fonds en son nom témoigne de ce respect.

Les mots qui suivent sont tirés de la scène finale de Jules César. Ils sont prononcés par Antoine alors qu'il parle de Brutus et ils constituent une épitaphe on ne peut plus appropriée pour Murray McDonald:

Sa vie était paisible et
les éléments si bien combinés en lui
que la nature pouvait se dresser et
proclamer au monde
C'ETAIT UN HOMME!

David K. Peters

Chairman's Report



This is my third and final message as Chairman of the Fund's Board of Trustees and it gives me great pleasure to report to you on CFDE's performance in 1984 which was highlighted by new records, both in terms of income as well as assistance for dental education and research.

New records of income

CFDE's total income reached a new high of $281,852 in 1984 which, I am proud to say, represents a 9% increase over 1983.

The key to the Fund's success, as we all know, is the personal support it receives from doctors across the country. In my previous messages I pointed out that since 1978 gifts from our friends in business and industry had exceeded those received from dentists and that I was confident we, as health professionals, would again show the leadership which is so rightly expected of us to ensure a bright future for CFDE and our profession.

It is with a feeling of pride and gratitude that I report this goal has been realized in 1984 with personal gifts from dentists, surpassing all other sources of income, reaching a record high of $96,355, up 17% from 1983. Major factors contributing to this excellent achievement are undoubtedly that, in comparison with the previous year, 159 more doctors donated to the Fund and that the number of Patrons and Honour Members increased to 107 and 350 from 83 and 293 respectively.

Much appreciated support from dental organizations moved ahead sharply in 1984 with a new high of $35,150, or 79% more than in 1983.

Investment and sundry income also recorded an increase of 8% over 1983 with a total of $65,061.

Assistance from business and industry is the only area that did not reach the previous year's total. A major reason for the drop in support is a special non-recurring gift which we received in 1983. We are certainly most grateful for the fine total of $78,161 in gifts from our business friends in 1984.

Increased assistance for dentistry

As can be seen on page 5 of this report, the Fund invested a total of $166,139 in dental educational and research projects in 1984. This is a substantial increase of $27,590, or 20%, in assistance over 1983.

CFDE's Trustees had approved even more aid for dentistry in 1984, in fact, $18,000 more. However, the withdrawal of three fellowship applications and a reduction in cost for two other programs resulted in the lower than anticipated grant payments. This amount is now available for the benefit of dentistry in 1985.

Le rapport du président

Voici mon troisième et dernier message à titre de Président du conseil des fiduciaires du Fonds. C'est avec très grand plaisir que je vais vous faire part des succès réalisés par le FCED en 1984, car nous avons battu les records précédents aussi bien en ce qui concerne nos revenus, que l'aide que nous avons accordée à l'enseignement et à la recherche dentaires.

Nos revenus battent les records préalables

Les revenus totaux de FCED s'élevèrent en 1984 à 281.852 $, soit une hausse de 9% en regard de 1983, un fait dont je suis très fier.

Comme nous le savons tous, le succès du Fonds repose sur le soutien qu'il reçoit personnellement des dentistes du Canada. J'ai souligné, lors de mes messages précédents, le fait que depuis 1978 les contributions que nous avions reçues de nos amis du secteur des affaires avaient dépassé celles des dentistes et que j'étais confiant que nous, les spécialistes de la santé, regagnerions notre place en tête – celle que nous devons occuper à juste titre.

C'est avec fierté et gratitude que je puis dire aujourd'hui que cet objectif a été réalisé en 1984, car les dons personnels des dentistes ont dépassé toutes les autres sources de revenu et ont atteint la somme record de 96.355 $, une hausse de 17% comparé à 1983. Je dois ajouter ici que 159 dentistes de plus qu'en 1983 ont contribué au Fonds en 1984 et que le nombre de "bienfaiteurs" et de "membres d'honneur" est passé de 83 et 293 à 107 et 350 respectivement, pour cette année.

L'appui que nous apportent les organismes dentaires est aussi monté en flèche avec des dons de 35.150 $, une hausse de 79% en regard de 1983.

Les revenus provenant de placements et de diverses sources ont également augmenté de 8% comparé à1983, avec un total de 65.061 $.

Le soutien que nous a apporté le secteur des affaires est le seul qui n'ait pas atteint le total de l'année précédente. Ceci provient de l'absence d'un don spécial que nous avions reçu en 1983 et qui n'a pas été répété. Nous sommes très reconnaissants envers nos amis des affaires pour la somme louable de 78.161 $ qu'ils ont contribuée en 1984.

Hausse de l'appui apporté à la médecine dentaire

Ainsi qu'il est possible de voir à la page 5 de ce rapport, le Fonds a investi en 1984, un total de 166.139 $ en projets d'enseignement et de recherche dentaires, une hausse considérable de 27.590 $ – soit 20% – comparé à 1983.

Les fiduciaires ont approuvé des subventions supérieures en 1984, en fait une hausse de 18.000 $. Toutefois, l'annulation de trois demandes de

The support of many of the Fund's important ongoing programs was maintained in 1984. In addition, being ever mindful of the fact that the future of the dental profession and the dental health of the Canadian people lies, in a very real sense, in the hands of the dental schools, the Trustees were pleased to approve funding for two exciting new projects.

Commencing in 1984 and for a period of three years, CFDE will provide funding for a Summer Teaching Institute, conducted by the Association of Canadian Faculties of Dentistry. The purpose of the Institute is to improve the teaching skills of dental faculty members, particularly new members, and the summer project is directly linked to a follow-up program to be held at all dental schools. The Trustees are convinced that the long-term benefits accruing from the Institute will be significant to the profession and the public.

Equally valuable the Trustees consider the benefits deriving from the sponsorship of a visiting professor to all Canadian dental schools providing an opportunity for students, faculty and local practitioners to hear an outstanding presentation which otherwise would not be available. I am pleased to announce that Dr. William F. May, Professor of Ethics at Georgetown University, will during the 1984/85 and 1985/86 academic years present a CFDE sponsored lecture on "The Intellectual and Moral Marks of the Professional" in the ten localities. It is hoped that many members of the profession will avail themselves of Dr. May's splendid presentation.

Further reduction in overhead

You will recall that last year I was able to report on a substantial reduction in overhead costs and it gives me much pleasure to say that in 1984, despite increases in the cost of virtually all goods and services required for the Fund's operation, this downward trend has continued thanks to the efforts of the Trustees and staff.

Management and fund raising costs as a percentage of total income were 27.3% in 1984, down by 1.6% from the 1983 figure of 28.9%. I am sure everyone will share our pride in this fine achievement.

Thank you

At the conclusion of this, my final report, I wish to express my sincere gratitude to each and everyone who has so generously contributed to CFDE in 1984. Your support made possible the Fund's progress last year and your continued help in the years ahead will ensure that CFDE's service to the profession and the people of Canada will grow to ever widening horizons.

I also wish to thank my fellow Trustees, the members of the Fund's Advisory Committee and the staff members for the help they have so generously given me during my term of office.

Much has been accomplished by CFDE so far, much more lies still ahead. Together we can and will fulfil the important aims and objectives of CFDE, our Fund.

David K. Peters

subventions et une réduction du coût de deux autres programmes ont eu pour résultat des dépenses inférieures à celles que nous prévoyions. Cette somme a été reportée à 1985.

Le Fonds a continué à financer un grand nombre de ses importants programmes en 1984. De plus, dans l'optique du fait que l'avenir de la profession et de la santé dentaire des Canadiens repose très réellement sur les écoles dentaires, les fiduciaires ont approuvé le financement de deux sensationnels nouveaux projets.

A partir de 1984 et pour une période de trois ans, le FCED subventionnera un Institut pédagogique d'été, dirigé par l'Association des facultés dentaires du Canada. Cet Institut vise le perfectionnement des compétences pédagogigues des membres des facultés dentaires, et spécialement les nouveaux enseignants. Ce projet d'été est directement lié à un programme suivi qui sera organisé dans toutes les écoles dentaires. Les fiduciaires sont convaincus que les avantages à long terme qui découleront de ce programme auront une grande portée pour le public et la profession.

Les fiduciaires jugent tout aussi importants les bénéfices découlant du financement d'un professeur invité à toutes les écoles dentaires, qui offrira aux étudiants, aux membres de la faculté et aux praticiens locaux l'occasion d'entendre une excellente présentation qui autrement ne leur serait pas accessible. C'est avec le plus grand plaisir que je vous annonce que le Dr William F. May, professeur de déontologie à Georgetown University, présentera au cours des années universitaires 1984/85 et 1985/86 et dans dix localités, une conférence subventionnée par le FCED sur "La marque intellectuelle et morale chez le professionnel". Nous espérons que de très nombreux membres de notre profession seront en mesure de profiter de cette stimulante allocution.

Réduction des frais généraux

Vous vous souviendrez que l'an dernier je vous ai signalé que les frais d'exploitation avaient fait l'objet d'une baisse considérable. C'est avec grand plaisir que je vous annonce aujourd'hui qu'en 1984, malgré l'augmentation de pratiquement tous les services et produits dont se sert le Fonds, cette tendance à la baisse continue grâce aux efforts des fiduciaires et de notre personnel.

Les coûts de gestion et de recueil de fonds, à titre de pourcentage des revenus, s'élevaient à 27,3% en 1984, une baisse de 1,6% comparé au pourcentage de 28,9% pour 1983. Je suis sûr que vous partagez notre fierté en ce qui concerne cette réalisation.

Merci

Avant de conclure, je désire exprimer ma sincère reconnaissance envers tous ceux qui ont si généreusement fait une contribution au Fonds en 1984. Votre soutien rend possible les progrès effectués l'an dernier et votre appui pour les années à venir garantit que les services offerts par le Fonds à la profession et au peuple canadien se développeront en direction d'horizons toujours plus étendus.

Je désire également remercier mes collègues fiduciaires, les membres du comité consultatif du Fonds et les membres du personnel pour l'aide qu'ils m'ont généreusement accordée au cours de mon mandat.

Le FCED a réalisé bien des choses jusqu'à présent et envisage faire même plus à l'avenir. Ensemble, nous serons en mesure d'atteindre les objectifs cruciaux visés par le FCED, notre Fonds à nous tous.

David K. Peters

1984 Financial Highlights
Faits financiers marquants

Income by source

Sources des revenus

Dental profession Profession dentaire	$ 97,630	35%
Business and industry Commerce et industrie	78,161	28%
Investment and sundry income Revenus de placements et de sources diverses	65,061	23%
Dental Organizations Associations dentaires	35,150	12%
Other contributors Autres donateurs	5,850	2%
TOTAL	**$281,852**	**100%**

These programs helped to build a stronger dental profession in 1984

Ces programmes ont renforcé la profession dentaire en 1984

Teacher training fellowships (Dentists and Dental Hygienists) Bourses de formation en enseignement (Dentistes et Hygiénistes dentaires)	$ 53,700	32%
Grants to dental schools Subventions aux écoles dentaires	25,000	15%
Dental teaching, research and education conferences Conférences sur l'enseignement et la recherche dentaires	22,100	13%
Summer program to improve teaching skills of dental faculty members Programme d'été destiné à perfectionner les compétences d'enseignement des membres des facultés dentaires	20,000	12%
Student table clinics and conference Conférence et cliniques sur table des étudiants	13,763	8%
Lorne E. MacLachlan Endowment / Dotation – Teacher training awards Bourses pour la formation d'enseignants	10,876	7%
Dental health month and other public awareness programs Mois de la santé dentaire et autres programmes d'information	8,000	5%
Visiting professorship (dental ethics) Professeur invité (déontologie dentaire)	6,000	4%
Dental hygiene educational programs Projets éducatifs d'hygiène dentaire	2,000	1%
Sundry awards Octrois divers	4,700	3%
TOTAL	**$166,139**	**100%**

Uses of support and revenue Emploi des fonds de soutien et revenus	$281,852
Program commitments / Programmes (1984 – 65.8%, 1985 – 6.9%)	72.7%
Fund raising / Recueil de fonds	16.6%
Management and general / Gestion et général	10.7%

Our records have been audited by Thorne Riddell. A copy of their report is available on request.

La vérification de notre comptabilité a été effectuée par Thorne Riddell. Une copie de leur compte-rendu financier sera envoyée sur demande.

1984 Honour Roll
Tableau d'honneur

Business, Industry and Dental Organizations

Entreprises, industrie et organismes dentaires

Founding Members / Membres Originaires
($10,000 and over – et plus)

* Amalgamated Dental, Toronto, Ont.
* Caulk, L.D. Company of Canada, Toronto, Ont.
* Dentsply Canada Ltd., Toronto, Ont.
* Procter & Gamble Inc., Toronto, Ont.

Patrons / Commanditaires
($5,000 – $9,999)

* Ash Temple Ltd., Toronto, Ont.
* Colgate-Palmolive Canada, Toronto, Ont.
* Warner-Lambert Canada Inc., Toronto, Ont.

Benefactors / Bienfaiteurs
($3,500 – $4,999)

* Medi-Dent Service, Burlington, Ont.

Sustaining Members / Membres de Soutien
($2,000 – $3,499)

* Canadian Dental Association, Ottawa, Ont.
* Canadian Dental Hygienists' Association, Ottawa, Ont.
Canadian Dental Service Plans Inc., Toronto, Ont.
Toronto Academy of Dentistry, Crown & Bridge Study Club, Toronto, Ont.
* Wrigley Canada Inc., Toronto, Ont.

Supporting Members / Collaborateurs
($1,000 – $1,999)

A-Dec Inc., Newberg, Oreg.
* Alberta Dental Association, Edmonton, Alta.
Butler, John O. Company, Guelph, Ont.
Clift's Dental Supplies Ltd., St. John's, Nfld.
* College of Dental Surgeons of British Columbia, Vancouver, B.C.
Cooper Laboratories Ltd., Mississauga, Ont.
Dépôt Dentaire (Canada) Ltée., Montréal, Qué.
Healthco (Canada) Ltd., Montreal, Que.
* Imperial Life Assurance Company of Canada, Toronto, Ont.
* International College of Dentists, Canadian Section, Toronto, Ont.
* Johnson & Johnson Inc., Montreal, Que.
* Kerr Canada, Div. of Sybron Canada Ltd., Mississauga, Ont.
* Kodak Canada Inc., Toronto, Ont.
* Nova Scotia Dental Association, Halifax, N.S.
* Ontario Dental Association, Toronto, Ont.
* Pelton & Crane Company, Charlotte, N.C.
* Royal College of Dental Surgeons of Ontario, Toronto, Ont.
* Royal Trust, Toronto, Ont.
Shofu Dental Corporation, Menlo Park, Cal.
Takara (Belmont) Company Canada Ltd., Mississauga, Ont.
Teledyne Water Pik Canada, Rexdale, Ont.
3M Canada Inc., London, Ont.
* Toronto Academy of Dentistry, Toronto, Ont.
* White, S.S. Dental Division, Etobicoke, Ont.

Contributing Members / Donateurs
($500 – $999)

* Astra Pharmaceuticals Canada Ltd., Mississauga, Ont.
Aurum Ceramic Dental Laboratories Ltd., Calgary, Alta.
* Beavers Dental Products Ltd., Morrisburg, Ont.
* Canadian Dental Supply Ltd., Vancouver, B.C.
* Coca-Cola Ltd., Toronto, Ont.
* Coe Laboratories Inc., Chicago, Ill.
* College of Dental Surgeons of Saskatchewan, Saskatoon, Sask.
* Denco, Div. of Sybron Canada Ltd., Toronto, Ont.
Great-West Life Assurance Company, Winnipeg, Man.
Guardian Insurance Company of Canada, Toronto, Ont.
Hiram Walker & Sons Ltd., Toronto, Ont.
Hygenic Corporation, Akron, Ohio
* Jelenko, J.F. & Company, Armonk, N.Y.
* Manitoba Dental Association, Winnipeg, Man.
Mardan Business Systems Ltd., Waterloo, Ont.
* New Brunswick Dental Society, Rothesay, N.B.
* Newfoundland Dental Association, St. John's, Nfld.
Peace River District Dental Society, Fairview, Alta.
* Posen & Furie Dental Laboratories Ltd., Toronto, Ont.
Rhône-Poulenc Pharma Inc., Montréal, Qué.
Seaboard Life Insurance Company, Vancouver, B.C.
Sherwood Medical, St. Louis, Mo.
* Syntex Dental Products Inc., Valley Forge, Pa.
Teledyne (Densco, Getz, Hanau), Saratoga, Cal.
* Williams Gold Refining Company of Canada Ltd., Fort Erie, Ont.

Subscribers / Adhérents
($100 – $499)

Alberta Dental Hygienists' Association
British Columbia Dental Hygienists' Association, Vancouver, B.C.
Buffalo Dental Mfg. Company of Canada Ltd., Cambridge, Ont.
* Canada Dentaire Ltée., Montréal, Qué.
Canadian Academy of Oral Pathology
Canadian Academy of Prosthodontics
Canadian Forces Dental Services, Ottawa, Ont.
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However, the Trustees wish to express their deep appreciation to each of the Fund's many supporters regardless of the amount involved.

Tous nos regrets

Vu les restrictions d'espace, seuls les noms des personnes qui ont contribué $25 ou plus sont énumérés dans ce tableau d'honneur.

Toutefois, les fiduciaires désirent exprimer leur vive reconnaissance envers tous les donateurs, quelle que soit la somme qu'ils aient contribuée.

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PROSTHODONTICS

DENTISTERIE PROTHÉTIQUE

1. Albino, J.E., Tedesco, L.A. and Conny, D.J. *Patient perceptions of dental facial esthetics: shared concerns in orthodontics and prosthodontics*. Journal of Prosthetic Dentistry, v. 52, no. 1, July 1984, pp. 9-13.

2. Atwood, D.A. *The future of prosthodontics*. Journal of Prosthetic Dentistry, v. 51, no. 2, February 1984, pp. 262-267.

3. Boone, M.E. *New materials and techniques in prosthodontics*. Dental Clinics of North America, v. 27, no. 4, October 1983, pp. 793-803.

Abstract:

In looking back over the past few years, dentistry has seen many changes. The newer methods and materials in complete denture prosthodontics, and the update on dental materials has been exciting. The development of many good disposable products is in keeping with other technologic advancements. Unlike aerospace and industry, dentistry has not yet entered the computer age. However, that day is not far off. With the newer materials used in the multiphases of prosthodontics, the astute practitioner can become acquainted with time-saving clinically oriented dental materials, and new products. The clinician's appreciation of a particular product is based on individual reaction to the disposable qualities, the cost factors, the ease of handling, and the end product. The advantages of time-saving methods are crucial to office overhead today. This article has covered various phases of removable complete dentures, dental materials, and products that are appropriate to those procedures.

4. Chamberlain, B.B., Razzoog, M.E. and Robinson, E. *Quality of care: compared perceptions of patient and prosthodontist*. Journal of Prosthetic Dentistry, v. 52, no. 5, November 1984, pp. 744-746.

Abstract:

The results suggest that, with the exception of retention, differences between patients' and prosthodontists' perceptions of treatment with complete dentures display greater variability with regard to function than to either aesthetics or comfort. Although the literature has suggested that satisfying the aesthetic concerns of the patient is likely to be a major hurdle in denture treatment success, this study suggests that occlusion, retention, and vertical dimension may be of more importance to effective communication. Misconceptions and unreal expectations should be dealt with early in the treatment program to avoid patient dissatisfaction. This study has demonstrated that patients are quite reliable judges of many criteria related to dentures, provided channels for two-way communication are opened. With the ever greater economic stresses that force dentists to consider patients' concerns, perhaps it is increasingly the dentist's responsibility to better educate patients to evaluate all aspects of the quality of care they receive and encourage extensive two-way communication early in the treatment process. The adjusted quality assessment criteria used in the present study may be a useful instrument to use with patients prior to the initial interview in an effort to establish a better dentist-patient relationship.

5. DePaola, L.G., Minah, G.E. and Elias, S.A. *Growth and potential pathogens in denture-soaking solution of myelosuppressed cancer patients*. Journal of Prosthetic Dentistry, v. 51, no. 4, April 1984, pp. 554-558.

6. Douglass, C.W. *The role of specialists and general practitioners in provision of prosthodontic services*. Journal of Prosthetic Dentistry, v. 50, no. 6, December 1983, pp. 844-852.

Abstract:

The national situation regarding prosthodontic services is being shaped by the following factors: There is an increasing number of people in the 60-70 and 80-year-old age group. There is less dental caries, which has resulted in more teeth in the adult population. There is less gingivitis, but it is unclear whether this factor is significant. There is an ongoing debate about the continued prevalence and severity of periodontitis, but with more teeth and more older adults there appears to be a great potential for an increase in the total amount of advanced periodontal disease. There is somewhat less total edentulism. There is a substantial unmet need for complete dentures as well as fixed and removable partial dentures. In summary, the stage is set for an increased demand for prosthodontic services.

7. Firtell, D.N. and Stade, E.H. *The declining complete denture patient pool in dental schools*. Journal of Prosthetic Dentistry, v. 51, no. 1, January 1984, v. 51, no. 1, pp. 122-125.

8. *History, information, and examination requirements of the American Board of Prosthodontics*. Journal of Prosthetic Dentistry, v. 52, no. 2, August 1984, v. 52, no. 2, pp. 281-287.

9. Klein, I.E. *Complete dentures – status in the 1980's*. New York State Dental Journal, v. 48, no. 6, June-July 1982, pp. 368-369.

10. Little, D.A. *The relevance of prosthodontics and the science of dental materials to the practice of dentistry*. Journal of Dentistry, v. 10, no. 4, December 1982, pp. 300-310.

11. MacEntee, M.I. *The denturist movement in Canada. Part III: Current status and potential*. Canadian Dental Association Journal, v. 47, no. 8, August 1981, pp. 528-533.

12. Margolese S., Swoope, C.C., and Pettapiece, G. *Attitudes of dentists in British Columbia toward removable prosthodontics*. Journal of Prosthetic Dentistry, v. 43, no. 1, January 1980, pp. 22-25.

13. Milenkovich, P.M., Gold, H.O. and Pruzansky, S. *Orthodontic-prosthodontic collaboration in the treatment of craniofacial anomalies*. International Journal of Orthodontics, v. 19, no. 2, June 1981, pp. 9-18.

14. Muncheryan, A. and Wood, T. *Preclinical teaching technique for making master impressions*. Journal of Prosthetic Dentistry, v. 52, no. 3, September 1984, pp. 432-435.

15. Nassif, J. and Jumbelic, R. *Current concepts of relining complete dentures: a survey*. Journal of Prosthetic Dentistry, v. 51, no. 1, January 1984, pp. 11-15.

Abstract:

Reline procedures for complete dentures have received scant attention in the literature. Fifty-seven dental colleges responded to an 11-item survey on reline procedures. According to the tabulated data, most dental schools recommended the following (not necessarily our recommendations). Leave the denture(s) out of the mouth for at least 24 hours prior to fabrication of the reline impressions. Use tissue-conditioning material only on selected patients. Use Coe Comfort as the tissue-conditioning material of choice. Place either none or one relief hole

in the maxillary denture, and place no relief holes in the mandibular denture prior to the impression(s). Place relief hole along the palatal midline of the maxillary denture. No specific size is recommended for the palatal holes. Place 1 mm of basal surface relief and 1 to 2 mm of border relief before the reline impression is made. Use a polysulfide rubber base material as the material of choice for reline impressions. Use a closed mouth impression technique. Remove the palate from the maxillary denture prior to processing. Use heat-cured resin (Lucitone) for processing. Use pressure-indicator paste prior to delivery of the denture(s). Remount the complete denture(s) on an articulator after processing for making occlusal corrections.

16. Ortman, H.R. *Meeting the challenges facing prosthodontics*. Journal of Prosthetic Dentistry, v. 43, no. 5, May 1980, pp. 586-589.

17. Palenik, C.J. and Miller, C.H. *In vitro testing of three denture-cleaning systems*. Journal of Prosthetic Dentistry, v. 51, no. 6, June 1984, pp. 751-754.

18. Preiskel, H.W. *Prosthetic dentistry today*. Journal of the Royal Society of Medicine, v. 74, no. 4, April 1981, pp. 240-242.

19. Ramstead, T., Norheim, P.W. and Eckersberg, T. *The reliability of clinical evaluation of some characteristics in complete prosthetics*. Journal of Oral Rehabilitation, v. 7, no. 1, January 1980, pp. 11-19.

Abstract:
The aim of this investigation was to study intra-assessor reliability and the relationship between individual and simultaneous evaluations when retention and stability of complete prosthesis and the condition of the residual ridges were clinically assessed according to defined criteria. Further, inter-assessor reliability and the reliability of simultaneous evaluations were studied by evaluating the condition of the residual ridge on two occasions. Nine patients and three prosthodontists participated. Generally, the reliability levels were low and individual deviations from the simultaneous evaluations were common.

20. Stern, M.A. and Whitacre, R.J. *Avoiding cross contamination in prosthodontics*. Journal of Prosthetic Dentistry, v. 46, no. 2, August 1981, pp. 120-122.

21. Valentin, C. and Morin, F. *Nomenclature et prothèse fixée*. Information Dentaire, v. 65, no. 13, March 31, 1983, pp. 1147-1149, contd.

22. Zinner, I.D. and Sherman, H. *An analysis of the development of complete denture impression techniques*. Journal of Prosthetic Dentistry, v. 46, no. 3, September 1981, pp. 242-249.

One copy of the above articles is available at no charge from the library to all CDA members: Non-members will be charged $5. This bibliography was generated with the help of MEDLARS.

La bibliothèque de l'ADC offre gratuitement à ses membres et pour $5 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS.

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The following current acquisitions are available on loan from the Resource Centre/Library.

Les titres indiqués ci-dessous sont maintenant disponibles à la bibliothèque/centre de documentation de l'ADC.

1. Ballenger, John Jacob, editor. *Diseases of the Nose, Throat, Ear, Head and Neck*. 13th edition. Philadelphia: Lea & Febiger, 1985, 1432p. 1 copy.

2. Berning, Randall K. and Johnson, Michael A. *Personalized Guide to Legal Issues*. Toronto: C.V. Mosby, 1985, 199p. 2 copies.

3. Besford, John. *Good Mouthkeeping: a Parent's Guide to Dental Care*. 2nd edition. Toronto: Oxford University Press, 1984, 191p. 1 copy.

4. Eger, Edmond I., editor. *Nitrous Oxide/N20*. New York: Elsevier, 1985, 369p. 1 copy.

5. Laskin, D.M. *Oral and Maxillofacial Surgery*. Volume II. Toronto: C.V. Mosby, 1985, 774p. 1 copy.

6. Oakes, Wm. W. *The Winning Combination*. 5th edition. 134p. 1 copy.

7. *Proceedings of the Conference on Dental Hygiene Research. Winnipeg, Manitoba. September 30-October 1, 1982*. Ottawa: Health and Welfare Canada, 1983, 60p. 1 copy.

8. Renson, C.E., editor. *Oral Disease*. Fort Lee, New Jersey: Update Books, 1978, 81p. 1 copy.

9. Stoelinga, Paul J.W., editor. *Proceedings Consensus Conference: The Relative Roles of Vestibuloplasty and Ridge Augmentation in the Management of the Atrophic Mandible. 8th International Conference on Oral Surgery. International Association of Oral and Maxillofacial Surgeons*. Chicago: Quintessence Publishing Company, 1984, 157p. 1 copy.

10. Wei, Stephen H.Y., editor. *Clinical Use of Fluorides: A State of the Art Conference on the Uses of Fluorides in Clinical Dentistry*. Philadelphia: Lea & Febiger, 1985, 232p. 1 copy.

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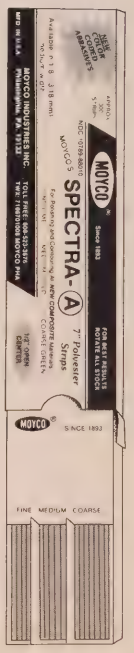

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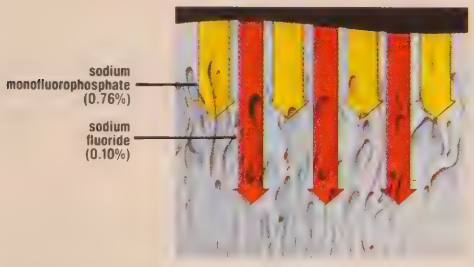

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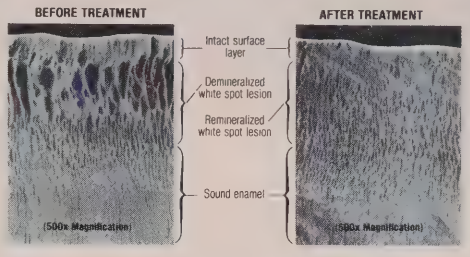

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2. Koulourides, T., et al, Ann. N.Y. Acad. Sci., **131,** 771-775, 1965.
3. Von Der Fehr, F.R., et al, Caries Res., **4,** 131-148, 1970.
4. Levine, R.S., Brit. Dent. J., **138,** 249-253, 1975.
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6. Hayes, H., et al, J. Dent. Res., **61**(4), 541, 1982
7. Harvey, K., et al, J. Dent. Res., **61,** 243, 1982
8. Hodge, H.C., et al, Brit. Dent. J., **148,** 201-204, 1980.

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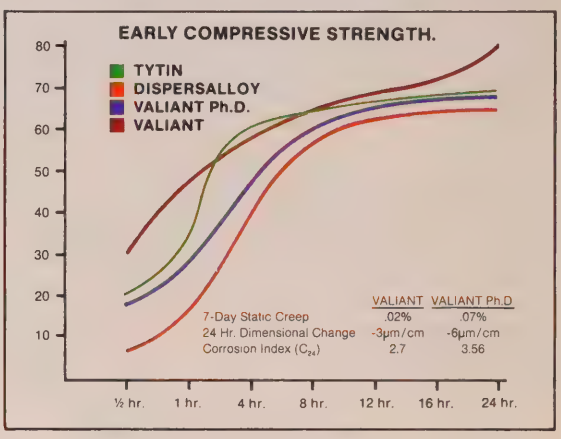

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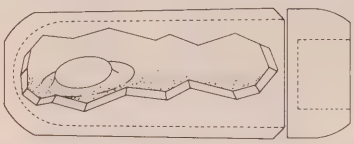

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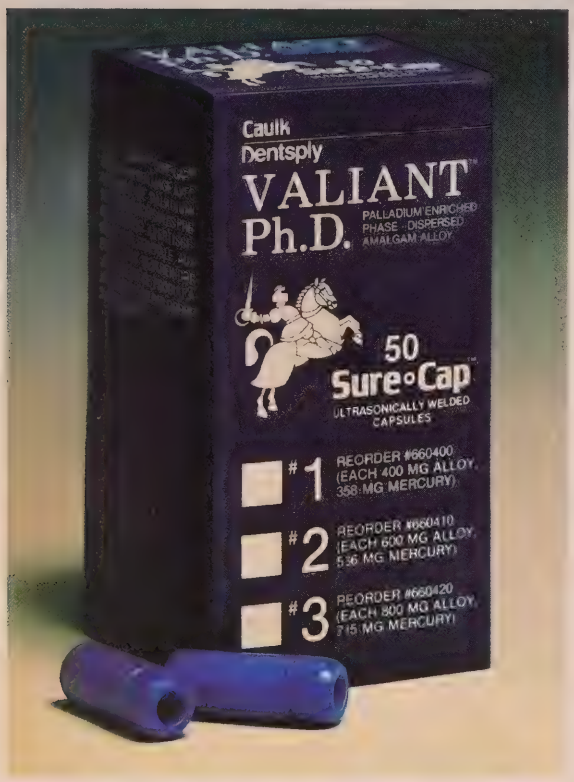

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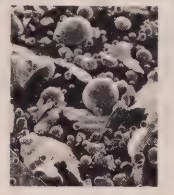

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Continuing Education in Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5	Atlantic Provinces Dental Convention and Post-College Assembly	Impact of the Law on the Practice of Dentistry	Dentistry and The Law	May 19 to 21		Dr. Burton Pollack	Open	TBA	GPs Auxiliaries	Kaireen Vaison (902) 424-2248 or 424-6507
Continuing Education in Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5	Atlantic Provinces Dental Convention and Post-College Assembly	Time Management in Dental Office	Practice Management	May 19 to 21		Dr. James Quinn	Open	TBA	GPs Auxiliaries	Kaireen Vaison (902) 424-2248 or 424-6507
Continuing Education in Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5	Atlantic Provinces Dental Convention and Post-College Assembly	Marketing Dentistry	Practice Management	May 19 to 21		Dr. James Quinn	Open	TBA	GPs Auxiliaries	Kaireen Vaison (902) 424-2248 or 424-6507
Continuing Education in Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5	Atlantic Provinces Dental Convention and Post-College Assembly	Problem-Solving, Decision-Making Delegation	Practice Management	May 19 to 21		Dr. James Quinn	Open	TBA	GPs Auxiliaries	Kaireen Vaison (902) 424-2248 or 424-6507
Continuing Education in Dentistry, Dalhousie University, Halifax, N.S. B3H 3J5	Dalhousie Halifax, N.S.	Aesthetics & Reconstruction Solutions in Your Practice				Dr. David Garber	Open	TBA		Kaireen Vaison (902) 424-2248 or 424-6507
McGill University 740 Docteur Penfield Ave. Montréal, Qué. H3A 1A4	Montréal Qué.	Pre-prosthetic Surgery for the Patient Needing Either Partial or Complete Denture Services	Prosthodontics	May 3		Drs. N. Dibai and K.C. Bentley	Open	$125		Dr. C. Clark (514) 392-4536

Continuing Dental Education

Sponsoring Institution Address	Location of Course	Title of Course	Subject Area	Date	Style	Instructor	Registration	Fee	Audience	Contact person/ Telephone
McGill University 740 Docteur Penfield Ave. Montréal, Qué. H3A 1A4	Montréal, Qué.	Basic Endodontics Revisited	Endodontics	May 10 & 11		Dr. B. Sedlezky		$300		Dr. C. Clark (514) 392-4536
University of Toronto Faculty of Dentistry 124 Edward Street, Toronto, Ont. M5G 1G6	Faculty of Dentistry Toronto, Ont.	Crown & Bridge	Restorative Dentistry	May 6, 7, 8	Seminar & Participation	Dr. B. McAdam	Open	$400	GPs	Mai Pohlak (416) 979-4504
University of Toronto Faculty of Dentistry 124 Edward Street, Toronto, Ont. M5G 1G6	Faculty of Dentistry Toronto, Ont.	Anaesthesia for the General Practitioner		May 10	Seminar & Participation	Dr. Robert Locke	Open	$125	GPs	Mai Pohlak (416) 979-4504
University of Toronto Faculty of Dentistry 124 Edward Street Toronto, Ont. M5G 1G6	Faculty of Dentistry Toronto, Ont.	Advanced Metal Ceramic Crowns	Dental Ceramics	May 17 & 18	Participation	Mr. A. Zeoli	Open	$150	GPs Dental Technicians	Mai Pohlak (416) 979-4504
University of Toronto Faculty of Dentistry 124 Edward Street Toronto, Ont. M5G 1G6	Sheraton Centre 123 Queen St. W. Toronto, Ont.	Functional Appliances in Orthodontics	Orthodontics	June 7 & 8		Dr. D.G. Woodside	Open	$375	Orthodontists GPs All Interested	Mai Pohlak (416) 979-4504
University of Toronto Faculty of Dentistry 124 Edward Street Toronto, Ont. M5G 1G6	Faculty of Dentistry 124 Edward St. Toronto, Ont.	Advanced Crown & Bridge in Metal Ceramics Restorations	Restorative Dentistry	June 14 & 15	Participation	Mr. A. Zeoli	Open	$150	GPs Dental Technicians	Mai Pohlak (416) 979-4504
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	ODA Headquarters 234 St. George St. Toronto, Ont.	Computer Demonstration by Xerox	Computers	May 2	Demonstration	Michael Barrington	Limited to 12	$55	GPs Specialists Assistants Hygienists Lab Technicians	Carole Latibeaudière (416) 922-3900
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	Toronto	FP 101 Predictable Results in Fixed Prosthodontics	Prosthodontics	May 3	Lecture	Morley Rubinoff	Open	$150	GPs Assistants	Carole Latibeaudière (416) 922-3900

Sponsoring Institution Address	Location of Course	Title of Course	Subject Area	Date	Style	Instructor	Registration	Fee	Audience	Contact person/ Telephone
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	Ottawa, Ont.	PM 105 Practice Management 1985 in the Dental Office	Practice Management	May 3	Lecture	Jerry White	Limited to 50	$150	GPs Assistants	Carole Latibeaudière (416) 922-3900
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	Windsor, Ont.	Period. 201 Surgical Periodontics: A Technique Course Using Animal Models	Periodontics	May 3	Participation	Gerald Pearson or Eric Freeman	Open	$325	GPs	Carole Latibeaudière (416) 922-3900
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	Toronto, Ont.	Endo 200 Participation Course in Endodontics	Endodontics	May 12	Participation	Bernard Dolansky or Stan Jacobson	Limited to 24	$325	GPs	Carole Latibeaudière (416) 922-3900
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	Toronto, Ont.	Endo 101 Endodontic Update: State of the Art	Endodontics	May 24	Lecture	Kenneth S. Serota or Lionel Lenkinsky	Open	$150	GPs Assistants	Carole Latibeaudière (416) 922-3900
Ontario Dental Association 234 St. George St., Toronto, Ont. M5R 2P1	Toronto, Ont.	Perio. 201 Surgical Periodontics: A Technique Course Using Animal Models	Periodontics	June 7	Participation	Gerald Pearson or Eric Freeman	Limited to 12	$325	GPs	Carole Latibeaudière (416) 922-3900
Continuing Education, Faculty of Dentistry, University of Western Ontario, London, Ont. N6A 5C1	London, Ont.	Occlusion III Practical Approach to Occlusal Equilibration	Occlusion	May 10, 11	Lecture & Participation	Dr. W.R. Teteruck	Limited to 24	$500	Dentists, Dental Lab. Technicians	Mrs. Maureen Firmston (519) 679-2550
Continuing Education, Faculty of Dentistry, University of Western Ontario, London, Ont. N6A 5C1	London, Ont.	Nitrous-Oxide Oxygen Conscious Sedation	Oral and Maxillofacial Surgery	May 22 to 24 Inclus.	Lecture & Participation	Drs. I.D.F. Schofield & A.G. Parnell	Limited to 25	$450/ $500 Fee includes accommodation for 2-3 nights.	General Practitioners	Mrs. Maureen Firmston (519) 679-2550

Continuing Dental Education

Sponsoring Institution Address	Location of Course	Title of Course	Subject Area	Date	Style	Instructor	Registration	Fee	Audience	Contact person/ Telephone
Continuing Education, Faculty of Dentistry, University of Western Ontario, London, Ont. N6A 5C1	London, Ont.	Practice Administration in the 80s	Practice Management	May 31, & June 1	Lecture	Drs. R.A. Brandon, W.J. Dunn	Limited to 40	$200 (Dentists) $150 GPs Auxil. (or $75 per day)	Dentists Assistants Hygienists	Mrs. Maureen Firmston (519) 679-2550
Manitoba Dental Association 300-296 Kennedy St. Winnipeg, Man. R3B 2M6	Westin Hotel Winnipeg	Communicable Diseases in the Dental Office	Disease Control	Sept. 7	Lecture	Drs. Rose & Quinn	Open	$75	GPs and Auxiliaries	Ross McIntyre (204) 942-5211
Winnipeg Dental Society 300-296 Kennedy St. Winnipeg, Man. R3B 2M6	International Inn Winnipeg	Dental Office Emergencies		Oct. 7	Lecture	Dr. B.K. Arora	Open	No Fee	GPs Auxiliaries	Ross McIntyre (204) 942-5211
Manitoba Dental Association 300-296 Kennedy St. Winnipeg, Man. R3B 2M6	Westin Hotel Winnipeg	Current Concepts of Odontogenic Cysts (Morning) An Update-Desquamative Diseases of the Gingiva (Afternoon)	Oral Pathology	Oct. 26	Lecture	Dr. Charles E. Tomich	Open	$75	GPs	Ross McIntyre (204) 942-5211
Winnipeg Dental Society 300-296 Kennedy St. Winnipeg, Man. R3B 2M6	International Inn Winnipeg	Orthognathic Surgery		Nov. 18	Lecture	Dr. Roger West	Open	No Fee	GPs	Ross McIntyre (204) 942-5211
Faculty of Dentistry University of Alberta Edmonton, Alta. T6G 2N8	Edmonton, Alta.	Removable Prosthodontics for the General Practitioners	Prosthodontics	May 13 to 17	Lecture Demonstration Participation	Dr. C. Kastner	Limited to 15	TBA	GPs	Mrs. Debbie Michalchuk (403) 432-5023
Faculty of Dentistry University of Alberta Edmonton, Alta. T6G 2N8	Edmonton, Alta.	Conscious Sedation in Dental Practice	Pain Management	May 27 to 31 Inclusive	Lecture Demonstration Participation	Dr. B.K. Arora	Limited to 16	$900	GPs	Mrs. Debbie Michalchuk (or) Dr. Alex Bene (403) 432-5023

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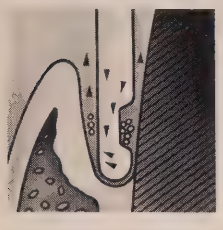

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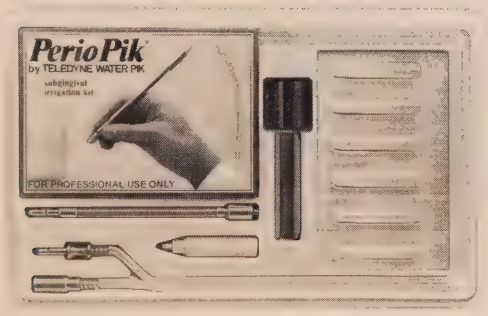

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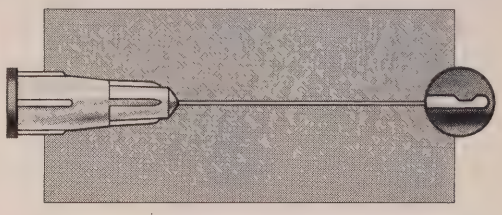

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The PerioPik is the state-of-the-art in subgingival irrigation. Easily incorporated into the practice of the periodontist or dental surgeon, the PerioPik is ideal for the treatment and prevention of periodontal disease. The PerioPik Subgingival Irrigation Kit can be ordered separately or complete with the Water Pik Appliance; a convenient foot pedal is also available. Either way, with the PerioPik, the practice of subgingival irrigation has indeed been perfected.

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(Scientific articles)

Previously unpublished articles, critical reviews of material on advances in dentistry and clinical reports are welcomed by the Journal of the Canadian Dental Association for consideration for publication. Material is accepted by the Journal on the understanding it is submitted solely to this publication.

Scientific Articles: should not exceed 2,500 words with a minimum number of illustrations, diagrams, photographs, tables or graphs. An average of 20 references is acceptable.

Major Reports: are longer contributions dealing with diagnosis and treatment of dental disease, studies in education, clinical and laboratory research and other detailed investigations pertinent to dentistry and related fields.

Clinical Reports: are brief (up to 1,500 words) reports, case histories and clinical observations. References should be limited and a minimum number of illustrations used.

Opinions: fully documented (800 words or less), are welcome for publication at the discretion of the editor.

Word Count: is based on the calculation of approximately 250 words typed, doubled-spaced on $8\frac{1}{2} \times 11$ paper.

Manuscript Requirements: Submit three (3) copies (original and two copies) to the editor, Journal of the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6. All graphs, photographs, charts and tables must also be submitted in triplicate.

A covering letter and a summary of the submission must accompany each article. Abstracts will be translated into French. The full mailing address of the corresponding author must accompany each manuscript.

The editor reserves the right to edit manuscripts for stylistic consistency, clarity and conciseness. The corresponding author will receive a copy of the edited manuscript for checking prior to publication. Galley proofs will be forwarded to authors but changes other than correction of typographical errors will not be accepted. Authors will be given a 24-hour turnaround time. No exceptions will be made. Authors must list professional degrees, academic/hospital affiliations and appointments and are requested **to submit a photograph** of themselves for publication with the article.

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References: must be keyed to the text and numbered consecutively. Journal references must give the author's name, article title, abbreviated journal name, volume number, first page number and last page number of article, year of publication:

1. Hechter, F.J. Symmetry and dental arch form of orthodontically treated patients. JCDA 44:173-184, 1978.

For books, give the author's name, book title, location and name of publisher, year of publication:

2. Kilpatrick, H.C. Work simplification in dentistry, ed. 2. Philadelphia, Saunders, 1964.13

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CANADIAN ACADEMY OF PERIODONTOLOGY ENDORSES IMPORTANCE OF NIH STUDY ON KEYES METHOD

INTRODUCTION

The Canadian Academy of Periodontology recently endorsed the importance of a Report of the Special Committee on NIH-NIDR Study on Periodontal Therapy. In a letter to the Journal, Dr. Allen S. Wainberg, President of the Canadian Academy of Periodontology, wrote, by way of introduction to the Report, the following:

"The Following report deals with the controversial presentations and publications of Dr. Paul Keyes and his associates. For the first time, access was gained to the original studies on which this matter arose. The Canadian Academy of Periodontology, through its Board of Directors, has endorsed the importance of this study, so that each practitioner will be able to intelligently consider the evidence and guide their patients. The American Academy of Periodontology has given permission for full dissemination of the following data."

SOMMAIRE

L'ACP corrobore l'importance de l'étude de la NIH touchant la Méthode Keyes.

L'Académie canadienne de parodontologie (ACP) a récemment corroboré l'importance d'un Rapport du Comité spécial pour l'étude de la NIH-NIDR sur la thérapie parodontaire. Dans une lettre adressée au Journal, le Dr Allen S. Wainberg, président de l'ACP, présente le rapport en question avec ces mots:

"Le rapport suivant traite des exposés et des publications du Dr Paul Keyes et de ses associés, lesquels sont controversés. Pour la première fois, on a eu accès aux études originales qui ont soulevé la controverse. Par l'intermédiaire de son Conseil d'administration, l'ACP corrobore l'importance de cette étude de manière à ce que chaque praticien soit en mesure de jeter un regard éclairé sur les preuves et guider sciemment ses patients. L'Académie américaine de parodontologie a permis qu'on publie ces données au complet."

BACKGROUND

In the late 1970's, Dr. Paul Keyes and his associates initiated a series of presentations in which they suggested an approach to periodontal therapy which later became known as Monitored Modulated Therapy (MMT). A great deal of media attention was directed to this "new" form of therapy, in part because of its claims (a) to be less expensive than conventional therapy, and (b) to eliminate the need for periodontal surgery even in advanced cases. Controversy arose in the public press and in the dental community regarding the evidence used to support such claims and their justification.

In response to many inquiries from the profession and the public, in 1981 the American Academy of Periodontology (AAP) issued a brief position statement (Appendix A). This statement pointed out that there was insufficient published scientific evidence on which to base a conclusion regarding the efficacy of what was becoming known as the "Keyes method". Stimulated by continuing media interviews and reports both pro and con, the members of the Academy pressed their national organization for a definitive statement regarding MMT or the "Keyes method". In 1982 the AAP issued a more detailed position statement (Appendix B). In essence, this statement was widely published in the dental press. The lay press continued to carry reports of the controversy, many of which took a point of view favorable to the "Keyes method".

At the 1982 annual meeting of the Academy, the General Assembly passed the following resolution:

> RESOLVED, That the Executive Council of the AAP be directed to form a five-member committee of distinguished researchers, educators, and clinicians charged with a complete review of the records and, where possible, a clinical examination of that group of patients treated in the NIH Paul Keyes study on periodontal therapy, and that their findings on the experimental design, results, and conclusions be reported to the membership and published in the *Journal of Periodontology*, the above to be performed with the greatest feasible expediency, unless circumstances of the investigation should indicate professional, legal or political judgments by the Executive Council that the study should be discontinued.

In late 1982, President of the Academy Charles W. Finley appointed an advisory committee to consider the resolution. This committee consisted of Past Presidents James Tobias and Robert L. Reeves, President Elect Erwin P. Barrington, and Executive Secretary Marilyn Holmquist, with Charles Finley as chairman. In January of 1983, the advisory committee proposed to the Executive Council five people to serve on the committee to carry out the resolution. The Executive Council approved these five individuals: Chairman Dr. Erwin P. Barrington, President Elect of the APP, Professor of Periodontics at the University of Illinois; Dr. S. Sigmund Stahl, Past President of the AAP, Past Chairman of the

American Board of Periodontology, Professor and Chairman of Periodontics at New York University; Dr. William Becker, Director of the American Board of Periodontology and Visiting Clinical Professor of Periodontology at the University of Southern California; Dr. Sigmund S. Socransky, Head of the Department of Periodontology at Forsyth Dental Center; and Dr. Robert L. Reeves, Past President of the APP, Past Director of the American Board of Periodontology, Former Chairman of Periodontics at the University of Southern California.

Dr. Reeves subsequently resigned from the Committee for personal reasons. He was replaced by Dr. Michael G. Newman, member of the Executive Council of the APP, Professor of Periodontics at the University of California at Los Angeles. Mr. Lawrence Berg, a biostatistician, Associate Director of the Office of Research and Development, Indian Health Service was appointed as a consultant to the Committee. Dr. Charles W. Finley also served as a consultant to the Committee.

Dr. Barrington, the Chairman of the Committee, met with Dr. Harald Löe, Director of the National Institute for Dental Research (NIDR), to propose the formation of a joint committee of persons chosen from the Academy and NIDR to evaluate the Keyes material. Unfortunately, this joint committee did not materialize. Subsequently, the AAP Committee requested permission from NIDR to examine the patients studied by Dr. Keyes, and/or their clinical charts. NIDR, however, denied the Committee access both to the patients and their records.

At the same time, Dr. Harald Löe and members of his staff at NIDR invited the committee to formulate a series of questions to help it evaluate experimental design, results and conclusions of the Keyes material. NIDR indicated that it would answer these questions based upon its own investigation of the patient records. The Committee thanks Dr. Löe and his staff for this cooperation.

To provide appropriate data that would enable the Committee to formulate appropriate questions for NIDR, the Academy filed a request under the Freedom of Information Act. Material received from NIDR pursuant to this request was in raw form. Nevertheless, the Committee did prepare an initial set of questions.

In response to the initial questions, NIDR produced a summary of observations and data from the patient records. These materials were gathered by Dr. Micah Krichevsky, Chief of the Microbial Systematics Section of NIDR. The preliminary data were descriptive in nature and provided a framework which indicated the scope of the Keyes material. The committee thanks Dr. Krichevsky and his associates for their help in providing responses.

After reviewing the summary of observations and initial patient data furnished by NIDR, the committee formulated a second series of questions designed to obtain specific patient data on the measurements performed (Appendix C). In preparing these questions, the committee examined the protocols submitted by Dr. Keyes to NIDR. It also utilized the following investigative criteria (the Committee realizes that it is not possible for clinical research endeavors to fulfill all these criteria; however, the more criteria that are fulfilled, the greater the scientific validity of the study):

1. the nature of the patient population;
2. whether there was a control group as well as random assignment of patients to experimental and control groups;
3. whether there was monitoring of number of drop-outs from the study;
4. criteria employed to define the type and severity of the disease states;
5. the nature of the clinical and microscopic measurements performed;
6. whether there was a method of assessing measurement error;
7. whether measurements were "blind";
8. whether a method had been used to monitor patient compliance with prescribed "home care";
9. whether patient compliance with receiving periodontal therapy only within the framework of the study had been monitored;
10. whether the periods of observation and data collection were consistent;
11. whether standardized criteria were used to determine treatment modality and treatment times (frequency and duration);
12. whether hypotheses were formulated in clear, objective, measureable terms;
13. whether the data had been summarized in an appropriate manner and whether or not the hypotheses of the protocol were tested with appropriate statistical methods; and
14. whether the conclusions drawn were consistent with the results obtained through testing the hypotheses.

Nature of Data Provided by NIDR

During discussions with NIDR personnel, the committee learned that the clinical measurements had been made by NIDR staff dentists, and the therapy, evaluations and microbiological monitoring of the patients were performed by Dr. Keyes.

The patient data provided to the committee consisted of a series of computer printouts and written answers to the committee's questions. These included data on age and sex of the patient, charting of pocket depth at three facial points on each tooth, attachment level taken at mid facial of each tooth, frequency and type of antibiotic therapy, frequency of visits, length of monitoring time, presence of bleeding points on probing, mobility, tooth loss, evaluation of plaque presence, radiographic assessment of bone change and the number of microscopic examinations of plaque samples at the "most damaged sites."

Measurements were performed by the clinicians at varied intervals. The computer printout provided two sets of clinical measurements for each patient. For some patients the first set of measurements was made after therapy (including antibiotics) had commenced. The second set of measurements provided purported to have been taken from 1.1 to up to 6.5 years after the initial measurements. The frequency of patient visits varied widely, ranging from one to thirteen visits per year. The average was 6.4 visits per year. No standard pattern for monitoring or treatment was observed.

Treatment

The committee was informed that the following treatment was done.

Scaling and root planing was performed on each patient at varied intervals. Frequency ranged from one to thirteen visits per year. The average for all patients was 6.4 visits per year. Orban files and ultrasonics were used predominately. Scalers were also used and curets were used rarely.

At each visit, antimicrobial agents were applied subgingivally. These agents included but were not limited to NaC1, MgS04 and H202 and were administered in various combinations.

Antibiotics (usually but not limited to tetracycline) were administered to all patients at least once during their course of observation. Some patients received antibiotics up to 8 times per year. The need for antibiotics was determined by tissue characteristics and microbial colonization findings. Some patients had received antibiotics and antimicrobial therapy prior to their initial measurements. From the data submitted to the committee, the length of each prescribed course of antibiotic therapy could not be determined.

Home care instructions were given to all patients. These included, in addition to commonly used home care techniques, the use of a mixture of NaHC03 and H202 plus salt rinses. Patients on low sodium diets were instructed to use MgS04.

Evaluation of Data and of Treatment Results

The investigative criteria listed previously were applied in order to evaluate the material given to the Committee. As stated previously, the scientific validity of results is greater as more of these investigative criteria are fulfilled. The findings are as follows:

1. **The nature of the patient population**
   The patient pool consisted of individuals referred to NIDR for treatment. The data provided to the Committee indicated that the marginal gingivitis group consisted of 14 patients, zero males and 14 females between the ages of 16 and 61 years. The periodontitis group consisted of 93 patients, 40 males and 53 females between the ages of 26 and 70 years. The "periodontosis" group consisted of 7 patients, 2 males and 5 females between the ages of 12 and 23 years.
2. **Whether there was a control group as well as random assignment of patients to experimental and control groups**
   There was neither a control group nor random assignment of patients.
3. **Whether there was monitoring of number of dropouts from the study**
   From the information received, there was no evidence of monitoring of number of dropouts from the study.
4. **Criteria employed to define the type and severity of the diseases**
   "Marginal Gingivitis
   1. Pocket depths 4 mm or less.
   2. Could have generalized bleeding on probing.
   3. No radiographic evidence of bone loss.

   "Periodontitis
   1. Advanced pocket formation or attachment loss of 7 mm or greater.
   2. Generalized bleeding on probing.
   3. Radiographic evidence of bone loss.

   "Periodontosis
   1. Age of 21 years or less.
   2. Advanced pocket depth of 7 mm or greater around at least one permanent first molar or incisor. Could involve other teeth as well.
   3. Could have generalized bleeding on probing.
   4. Radiographic evidence of bone loss."
5. **The nature of the clinical and microscopic measurements performed**
   As far as could be determined, a single examiner performed all of the clinical measurements. The material included data on age and sex of the patient, charting of pocket depth at three facial points on each tooth, attachment level taken at mid-facial of each tooth, frequency and type of antibiotic therapy, frequency of visits, length of monitoring time, presence of bleeding points on probing, mobility, tooth loss, evaluation of plaque presence, radiographic assessment of bone change, and the number of microscopic examinations of plaque samples at the most damaged sites.

   Radiographic assessment of bone change was carried out by three examiners using a nonspecific procedure. They reviewed panorex radiographs in which bone changes were judged to be "better", "worse" or "no change". Two of the three evaluators determined the assessment. The dates of the radiographs were unknown to the evaluators.

   Plaque was scored using a subjective estimate of "above average", "average", and "below average" for the entire mouth. These descriptive terms were not defined.

   Mobility was based on subjective criteria similar to the Miller index.

   Plaque samples were taken from sites considered by the investigator to be "most damaged". The samples were prepared as wet mounts for phase contrast microscopy and evaluated at low power magnification to identify patterns of microbial colonization.
6. **Whether there was a method of assessing measurement error**
   There was no method of assessing measurement error.
7. **Whether measurements were "blind"**
   Measurements were not "blind" (i.e., the persons performing measurements were aware of the patients' treatment.)
8. **Whether a method had been used to monitor patient compliance with prescribed "home care"**
   No evidence was presented to indicate that there had been monitoring of patient compliance with prescribed "home care".
9. **Whether patient compliance with receiving periodontal therapy only within the framework of the study had been monitored**
   No such monitoring of patient compliance with receiving therapy only within the framework of the study was recorded.
10. **Whether the periods of observation and data collection were consistent**
    Periods of observation and data collection were not consistent.
11. **Whether standardized criteria were used to determine treatment modality and treatment times (frequency and duration)**
    From the evidence presented, there did not appear to be standardized criteria for treatment with respect to modality and times.
12. **Whether hypotheses were formulated in clear, objective, measureable terms**
    Hypotheses did not appear to be formulated in such terms.
13. **Whether the data had been summarized and the hypotheses of the protocol tested with appropriate statistical methods**
    Hypotheses of the protocol had not been tested with appropriate statistical methods.
14. **Whether the conclusions drawn were consistent with the results obtained through testing the hypotheses**
    Since there was no evidence that hypotheses had been tested, conclusions based on the objective evidence could not have been drawn.

Comments

It is not surprising that Dr. Keyes and his colleagues reported a reduction of gingival inflammation in their patients, for the techniques utilized by these clinicians consisted of a number of commonly employed therapeutic procedures such as root planing and scaling, and patient self-care procedures. In addition, systemic antibiotic therapy was prescribed routinely. It was given at least once to all patients, and up to eight times per year for some patients. Scaling and root planing, patient self care procedures, and prudent use of systemic antibiotics are well known to be effective in reducing the bacterial infection and clinical signs associated with gingival inflammation. Furthermore, it should be noted that patients were seen on an average of over 6 times per year.

In evaluating the data, the Committee determined that the vast majority of patients studied had slight to moderate, rather than advanced periodontal disease. The majority of teeth treated had pocket depths of less than 6 mm. For example, in the worst (periodontitis) group, 1,826 teeth (75%) of 2,457 teeth had pockets which were less than 6 mm.

The usefulness of microscopic monitoring of the "most damaged site" and evaluation of microbial patterns indicative of periodontal disease activity could not be established from the information provided. The same can be said for the usefulness of locally administered antiseptic agents.

No evidence was presented to indicate whether or not there was a differential impact on the periodontal health of patients using salt and oxygenating agents.

The committee was informed that objective criteria for observations and measurements were not defined prior to beginning this study. The majority of clinical observations and measurements were converted to numeric data as a result of discussions between the computer analysts and the clinicians *after* the observations were complete. These procedures are not considered to be consistent with accepted methodologies for clinical trials.

The data relating to the use of systemic antibiotics in *all* patients, and the frequency with which they were used raised additional concerns. Among these concerns are the following: (1) the control of microbiological colonization patterns with multiple and frequent antibiotic prescription increases the likelihood of antibiotic resistance among the oral and nonoral flora; (2) multiple and frequent use of systemic antibiotics increases the likelihood of untoward side-effects including (a) toxicity, (b) allergy, (c) drug interference, (d) gastrointestinal disturbances; (3) the scientific and clinical rationale for the frequent pattern of antibiotic prescription (in some patients up to eight times in one year) is unclear.

CONCLUSIONS

From evaluation of the material provided, the Committee concluded that: (1) there were no controls; (2) there was no comparison between the investigator's treatment and any other treatment modality; (3) measurements were taken in a nonsystematic fashion over varied periods of time; (4) the usefulness and validity of microscopic monitoring of plaque samples was not established; (5) no objective criteria for observations and measurements of periodontal disease and health had been established; (6) any beneficial effect on the patients beyond that achieved by conventional scaling, root planing and home care procedures could not be substantiated. The committee seriously doubts that any scientifically valid conclusions can be drawn from this material.

For further information, readers may contact the National Institutes of Health 8600 Rockville Pike, Bethesda, Maryland, USA 20209. Additional material on this subject was published in this Journal, Vol. 49, No. 6, (June 1983), page 366.

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PAINLESS PARKER!

THE INTERVENING YEARS

Peter M. Pronych, BA, DDS, MS

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In a previous article (JCDA 51: 72-74, 1985), Dr. Parker's style and promotion of dentistry were traced from their beginning to their implementation in New Brunswick. In this, the second phase, Edgar Parker's dental adventures are furthered chronicled in New York City at the turn of this century. It begins with his hasty exit from the North. . .

Painless Parker hurriedly left the Klondike after getting into an unresolvable dispute with a former patient. Dr. Parker made his way to Brooklyn, New York, in 1896 where he visited with his parents who had moved there from New Brunswick. He was twenty-four years old.

To idle away the time while in Brooklyn, Edgar took up blowing on the cornet again. The intent was to learn to play the instrument properly so that he could save on the wages of a cornetist for his outdoor dentistry performances. The unbearably mournful sounds of Edgar practicing on the cornet wafted out the open windows and into the street. Across the street a nineteen year old piano student was seriously practicing to become a pianist. The noise was terribly distracting. When she gathered up enough courage, she went to the Parker house, introduced herself as Frances Wolfe and complained about the disturbing noise being made by Edgar's cornet. Shortly after this encounter Edgar and Frances became good friends. They were wed later that summer. At Edgar's insistence they honeymooned in New Brunswick and Prince Edward Island.

When the couple was in Moncton, Edgar couldn't resist the urge to do some dentistry in an area which was very familiar to him. To the horror of his new bride who looked on, disbelievingly, from the hotel window, Edgar set himself up on a street corner and proceeded to perform extractions to the delight of the crowd. He was promptly arrested for practising without a valid New Brunswick dental licence. After leaving New

Brunswick, Edgar and Frances wandered across North America and settled briefly in San Bernardino, California. Here, Edgar set up an orthodox practice of dentistry. However, he was soon discouraged with it, as not many people availed themselves of his services. When Frances announced that he was going to become a father and she wanted to return to Brooklyn, he eagerly seized the opportunity to leave.

Back in Brooklyn, Edgar rented an office at 124 Flatbush Avenue. Once again, at the urging of his wife, Edgar unhappily tried to practice within the strict confines of the prevailing unwritten code of ethics. He even used his real name on the sign – E.R. Parker – Dentist. Edgar became despondent and discontented with the boredom of the routine. He didn't have many patients, and as a result had a very difficult time getting enough money to support his family and pay the rent. During the plentiful free time which he had while waiting for patients he struck up a friendship with the rent collector by the name of William (Bill) Beebe. Beebe was sympathetic and listened to the sad tales that Edgar recounted about the difficult financial situation. Bill had previously worked with a circus as a musician and animal trainer. Edgar's stories about his travelling dentistry show in New Brunswick excited Bill and he hit upon the idea that if the principles of a circus were applied to the Dentistry Show, this would be tremendous promotional marketing to get patients to come to Edgar. With that, Beebe and Parker entered into a partnership and Beebe became Parker's manager. From that moment on, the brief era of E.R. Parker – the "traditional" dentist was over.

Circus techniques

Edgar's enthusiasm and energy returned quickly.

The former circus crony influenced and encouraged Edgar Randolph Parker to aspire to great heights. Parker emerged with a clear vision of his destiny as the "renewed" Painless Parker – the Great Dentist!

Beebe set to the task of making the public more aware of Painless Parker. He began by staging outdoor performances, reminiscent of Painless Parker's New Brunswick fair-going days, in the Bronx, Brooklyn and Coney Island. Jugglers, tumblers and clowns would accompany his red wagon, dental chair and three piece combo on the travelling Dentistry Shows. At Coney Island, for example, Painless Parker usually staged his tooth-extraction performances twice daily. The hallmark of his appearance was his impeccable white frock coat and brushed beaver top hat.

Painless Parker didn't look back, he was again in his element and glory doing what he liked best.

Painless Parker refined his oratorical techniques in rebutting the hecklers who appeared in the crowds. They attempted to discredit him by accusing him of many things, from being a fraud to hiring people who pretended to have teeth extracted on the platform.

While Painless Parker was performing at his travelling Dentistry Shows to attract patients to his office, Beebe was planning

other ways to lure the patients. He hired sandwich-board sign men to tramp the streets spreading the message of Painless Parker giving a square deal for the common people with his revolutionary style of dentistry. Beebe had signs painted on the side of the 124 Flatbush Avenue building proclaiming the virtues of Painless Parker's Dentistry. The most notable sign was also the largest (10 feet by 110 feet). It announced, "Painless Parker, particularly pleasing to particular patients and philanthropically predisposed to popular prices".

The plans worked, patients flocked in large numbers to his office. Painless Parker had more patients than he could possibly treat by himself. He expanded his facilities, hired a receptionist and a dentist to assist him.

One day outside the 124 Flatbush Avenue building Beebe happened to see the crowds waiting to get in to see the painless dentist. He hit upon another idea. A tightrope was strung between Painless Parker's dental office window and the high building across the street. A tightrope walker appeared several times during the day holding a pole. When he began to edge toward Painless Parker's office, he shouted that he was on his way to Painless Parker who didn't hurt a bit. Painless Parker, dressed in white coat, would lean out of the window, wave to the crowds below and invited everyone to come up and experience his painless dentistry. The tightrope walker would disappear into the open window and emerge several minutes later proclaiming that he had just come from Painless Parker who didn't hurt a bit. When the walker rested, a human fly would scale the brick walls of the building yelling down the same message.

Painless Parker acquired a high public profile and the dental community became uncomfortably aware of his presence. Some dentists realized that they were benefitting from Parker's antics, in that he was making more people conscious of dentistry and indirectly increasing their patient loads. However, others felt offended by his unprofessional, unethical and undignified actions. They contended that Painless Parker had engaged in blatant self-advertising, promised something which he couldn't possibly fulfill, and misled the public. Painless Parker's conduct and behavior were constantly being challenged in the courts. He had lawyers engaged to defend him from the many court actions brought against him.

Demand required expansion

His determination to expand was insatiable. He leased the entire second floor in addition to the original floor at 124 Flatbush Avenue. He hired fifteen dentists and installed forty-five dental chairs to cope with the large demand for dental services. He believed that one dentist should be able to attend to three patients at one time, rather than standing around waiting for things such as the amalgam material to harden. In later years, Painless Parker proudly referred to this as the time he pioneered the concepts of more productive use of a dentist's time and of many dentists working in the same office. He opened five separate offices in New York City and offices in Albany and Troy.

Painless Parker's outdoor performances promoting his particular style of dentistry and his offices became more elaborate. His troupe now consisted of a girl chorus-line, an Irish tenor, whole companies of jugglers and acrobats plus a complete brass band. At times, Painless Parker would post himself at busy intersections and throw handfuls of coins to the crowds while extolling the virtues of dental care. Beebe even arranged for Painless Parker to appear in the centre rings of different circuses to perform various acts such as putting restorations into teeth or removing teeth from animals such as lions, tigers and walruses. It is also rumored he set diamonds in central incisors of several sport notables of the time.

At the turn of the 20th century, his name was a household word and the public loved his flamboyant manner and his performances.

There is no evidence to suggest that Painless Parker's dentistry was technically different than the average dentist in his era. It was his personality, his drive and his energy that set him apart. A bear for work, he practised right along with the dentists he employed.

Frances had given him a family of two girls and a boy and for them he bought a fifty-acre estate on Long Island.

At age 32, Edgar Randolph "Painless" Parker seemed to be at the threshold of success. Then tragedy struck! His close and very good friend and advisor, William Beebe suddenly died!

Painless Parker was shocked, devastated! Quite abruptly life seemed to have lost its meaning for Edgar. Several weeks after his friend's funeral Edgar came down with typhoid fever. He recuperated slowly. That year – 1904, he became mentally and physically drained, exhausted, and suffered from extreme stress and fatigue. A broken man, he gathered up his family, left New York with all its memories and set sail for Europe.

A style of dentistry which began out of necessity and out of opportunity in New Brunswick, reached its epitome of sophistication and success in New York City. Never again were there to be the outlandish antics and style of dentistry as concocted by Parker and Beebe. However, Painless Parker's style of dental promotion which brought him success in New York would serve as a pattern for his future dental activities on the west coast.

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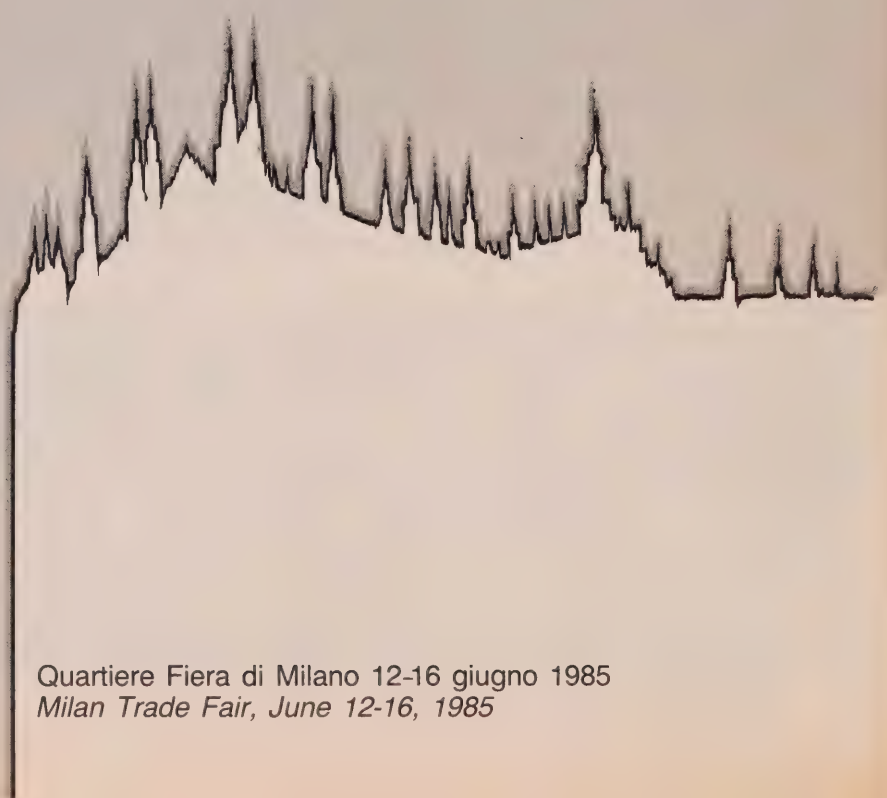

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HYDROXYLAPATITE AND SKIN GRAFT VESTIBULOPLASTY

A NEW DIMENSION IN PREPROSTHETIC SURGERY

Gary L. Freedman, DDS, MSD, FRCD(C)
Montreal

ABSTRACT

A case report of hydroxylapatite augmentation of a markedly atrophic mandible is presented. A brief description of the material, its advantages and the surgical procedure involved are outlined.

SOMMAIRE

Voici le cas d'une mandibule atrophiée d'une façon très prononcée dont le taux d'hydroxyapatite est très élevé.

L'article examine brièvement le matériel offert, ses avantages et la procédure chirurgicale requise.

DISCUSSION

The "denture sore mouth", a result of loss of retention and stability with concomitant discomfort and difficulty in speech and mastication of varying degrees, is not uncommon in denture wearers. In the patient with atrophic ridges (particularly the mandible), these problems are magnified.

With the relatively new hydroxylapatite [Ca_{10} $(PO_4)_6$ OH_2] materials now available, the ability to create a convex ridge form with adequate alveolar height and a non-mobile soft tissue base is possible in a predictable manner. This can be accomplished utilizing a submucosal vestibuloplasty and the subperiosteal placement of the hydroxylapatite (HA).

Where inadequate soft tissues exist and/or large increases in alveolar height are required, a second surgical procedure of buccal and labial vestibuloplasty with skin or mucosal grafting is necessary to obtain optimal preprosthetic results.

Parnell et al.[1] have, in selected cases, used a modified procedure whereby in one operative session, the mandible is augmented with HA from the ascending rami anteriorly to the mental foramina and a vestibuloplasty (no augmentation) with mucosal grafting is accomplished in the anterior region.

Hydroxylapatite ceramics, when implanted into or onto bone, are dense, nonresorbable and become bonded to the bone matrix as calcification takes place directly on the HA without encapsulation.[2] Boyne,[3] using electron microscopy, has demonstrated a very thin layer of organic tissue between the bone and the HA. However, he could not separate the HA without fragmentation and leaving crystals on the bone. There is no systemic or local toxicity and no foreign body or inflammatory response to the material.

The properties of HA, the various surgical indications and techniques involved, and the numerous advantages of this material over other alloplasts and autogenous bone grafts, have been well documented with encouraging four-year follow-ups.[4-7] HA does not resorb and the significant postoperative losses that occur with autogenous rib and iliac crest grafts do not result. A second surgical site to obtain autogenous bone is eliminated along with the morbidity of donor site complications.

Unlike other grafting materials, where wound dehiscence would usually result in partial and often complete loss of the graft due to an infectious process, healing by secondary intention is uneventful, with only the loss of a few HA particles. HA may be used in conjunction with other surgical augmentation procedures as well as during and after the placement of various implant systems. The surgical procedures to place HA are easier to perform (can be an office procedure) than other grafting systems and the results are superior and long lasting.

The prosthetic management is also facilitated, due to a more ideal ridge form, and

denture construction can begin as early as four weeks postoperatively. Where esthetics is paramount, denture teeth may be incorporated into the surgical splint, thus eliminating the need to be edentulous throughout the healing period.

HA can withstand repeated sterilization by routine autoclave techniques without alteration of its properties. Radiographic follow-up is enabled by the high calcium content of the HA which renders it radiopaque.

Report of Case

Mrs. R.D., a 47-year-old white woman was referred for mandibular augmentation due to her inability to retain a denture. Medical history and clinical examination revealed a healthy woman whose only medical and dental contact was for the removal of her teeth 25 years earlier.

Oral examination showed an adequate maxillary ridge but a Class IV mandible; i.e., there was resorption of the basilar bone producing a pencil-thin, flat mandible. The genial tubercles projected above the crest. Radiographic examination revealed the extent of the resorptive process (**Fig. 1**). Laboratory tests, including serum calcium and phosphorus, were within normal limits.

SURGICAL PROCEDURE

Under general nasoendotracheal anesthesia, utilizing vertical supraperiosteal incisions bilaterally in the canine region, the mental neurovascular bundles were identified and freed from surrounding tissue. A blind submucosal (supraperiosteal) vestibuloplasty, extending posteriorly to the ascending rami and joining anteriorly at the midline, was performed with scissors. The buccal and labial mucosa were thus undermined, the high muscle attachments released from crestal bone, and the released tissues reflected inferiorly. This initial procedure aids in the insertion of the HA carrier syringes and avoids complete obliteration of the sulcus when the material is deposited.

The incisions were then carried through periosteum to bone and a subperiosteal tunnel was prepared along the length of the mandibular crest. Care was taken not to extend lingually beyond the mylohyoid attachments.

Due to the height of alveolar augmentation desired, it was necessary to blindly incise the periosteal layer with scissors, along the length of the superior lingual aspect of the ridge crest. This allowed the placement of an increased amount of HA* than would otherwise be possible if confined by the inelastic periosteum. Traction sutures were placed to aid in the insertion of the carrier syringes. A total of 20 grams was utilized.

*Alveograf

The incisions were closed sequentially with polyglycolic suture. The material was molded manually to improve ridge form. A clear acrylic stent (to allow for visualization of pressure areas which could then be relieved to prevent pressure necrosis), previously prepared to the anticipated ridge form, was fixated with bilateral circumandibular wires. The procedure was well tolerated, aided by intra- and post-operative antibiotic and steroid therapy.

The stent was removed in 10 days and a postoperative radiograph revealed the bulk of hard tissue (**Fig. 2**). Although a relative deepening of the lingual vestibule was noted, it was decided to plan a labial and buccal vestibuloplasty with split-thickness skin grafting in order to achieve maximum retention and stability for this relatively young patient. This was accomplished five weeks later.

A fibrous coating of well vascularized tissue covered the HA particles. The ridge tissue (including HA) was trimmed with

Fig. 1. Preoperative panorex radiograph.

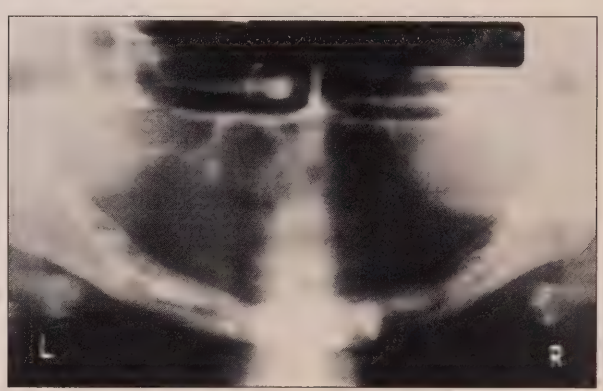

Fig. 2. Postoperative radiograph.

Fig. 3. One month postoperative.

Fig. 4. Six-month follow-up panorex film.

scissors to remove any irregularities prior to placing the skin graft. The protective stent was removed in seven days to expose the vascularized graft and the significant alveolar ridge (**Fig. 3**), and a denture was placed four weeks later.

A six-month follow-up revealed little, if any, change in ridge form. The patient was functioning well with the denture, which was then relined. Few further changes are anticipated.[6] A panorex showed consolidation of the HA (**Fig. 4**).

DISCUSSION AND SUMMARY

The procedures described offer superb results and have a low morbidity as compared to previous augmentation techniques. The one-stage submucosal vestibuloplasty and subperiosteal HA placement is satisfactory for the patient where atrophy is less severe. The increase in vertical height results in a relative deepening of the lingual sulcus (the mylohyoid attachment prevents the superior displacement of lingual soft tissue), which improves denture retention.

The second procedure is necessary for additional stability in very atrophic conditions where the large bulk of HA required effectively diminishes the labial and buccal vestibule. In poor-risk patients, unable to withstand a second procedure, the modification described by Parnell[1] should be considered. Patients should be fully informed of the risks involved, the anticipated results and, when indicated, the need for a second operative procedure.

Dilution of the HA particles with finely crushed autogenous bone has been advocated for Class IV cases.[5] The excellent results obtained here show that this is not always necessary, thus eliminating the requirement of a donor site.

The procedures are performed either under general or local anesthesia, depending on the preference of the surgeon and the patient and on the patient's medical condition.

The advent of hydroxylapatite has added enormously to the options available to the preprosthetic surgeon and has certainly enhanced his or her armamentarium.

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Reprint requests to Dr. Freedman.

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DRUG INDUCED XEROSTOMIA

THE EFFECTS AND TREATMENT

Helen Grad, MSc.Phm; Miriam Grushka, MSc, DDS; Lawrence Yanover, DDS, Dip. Paedo., PhD

ABSTRACT

Complaints of xerostomia, or mouth dryness, are common even in the absence of clinical signs. Frequently, drugs taken for a prolonged time period may be important as etiological agents in causing xerostomia by their ability (either directly or indirectly) to alter salivary flow. The article includes a list of Canadian drugs which are potentially xerostomic. Various treatment modalities are discussed and suggestions of the best therapeutic approaches are made.

SOMMAIRE

Même lorsqu'on ne relève pas chez elles de signes extérieures, certaines personnes se plaignent de souffrir de xérostomie ou d'avoir la bouche sèche. Souvent, les drogues prises durant longtemps peuvent constituer des agents étiologiques importants qui entraînent la xérostomie en modifiant, directement ou indirectement, la sécrétion salivaire. Dans cet article, on trouvera une liste des drogues vendues au Canada qui peuvent causer la xérostomie. On y expose aussi divers modes de traitement et on y suggère les meilleures approches thérapeutiques.

INTRODUCTION

Saliva plays a major role in maintaining the health and function of the oral cavity. Xerostomia (dry mouth) results from decreased salivary production and predisposes the oral cavity to multiple problems. This article will focus on drug-related xerostomia, its effects and treatment.

XEROSTOMIA

Normally, 1000 to 1500 ml of saliva are produced daily, containing both serous (parotid and submandibular glands) and mucous (sublingual and minor salivary glands) secretions[9,17,20]. Salivary glands are innervated by the parasympathetic and sympathetic divisions of the autonomic nervous system. In general, stimulation of the parasympathetic nerves results in a large watery serous secretion, while stimulation of sympathetic nerves results in a salivary flow that is slow in commencing and sparse in amount[9]. Each division originates centrally and requires two separate fibres (a pre-ganglionic and a post-ganglionic fibre) to activate the target salivary gland. Acetylcholine (ACh) is the neurotransmitter secreted at both the pre- and post-ganglionic nerve endings of the parasympathetic system (cholinergic stimulation) and is inactivated chiefly by the enzyme cholinesterase. The sympathetic division differs from the parasympathetic in that the neurotransmitter released at the post-ganglionic junction is norepinephrine (adrenergic stimulation) which is inactivated mainly by resorption into the sympathetic nerve endings or diffusion away from the site of release.

Drugs can interfere with normal salivation by altering fluid and electrolyte balance, interfering with central salivatory centres and by affecting post-ganglionic synaptic (adrenergic or cholinergic) transmission. It is estimated that over two hundred drugs currently marketed in Canada may cause xerostomia. **Table I** lists those drugs which are often taken chronically; therefore, their potential impact on the oral cavity through

decreased salivary flow can be significant. The drugs are listed by therapeutic class and referred to by their generic name followed by a common trade name. In general, medications which have anticholinergic properties exert either a major (high incidence/pronounced decrease) or a minor (low incidence/slight decrease) effect on salivary flow. Antiadrenergic drugs usually have only a minor effect. Diuretic drugs, which affect fluid and electrolyte balance, generally have a minor effect as well; a major effect may signify a marked potassium loss[31].

CONSEQUENCES OF MOUTH DRYNESS

Saliva contains antibodies, enzymes and buffers; it lubricates and protects the oral mucous membranes and teeth, and also facilitates mastication, swallowing, digestion and speech[2,17,20]. Decreased flow can lead to irritation, abrasion and eventually infection as the soft tissue barrier to microbial invasion is disrupted. In addition, dental caries may increase as decreased salivary flow leads to lessened mechanical cleansing of teeth, altered salivary composition of pellicle and plaque[33] and reduced capacity for tooth remineralization with salivary calcium and phosphate ions[19]. The oral flora may also become altered and contain higher than normal levels of ***Streptococcus mutans*** and lactobacillus, the pathogenic bacteria associated with severe caries[4]. Finally, a patient's nutritional or general health status may become compromised as a result of soft tissue lesions, increased caries and decreased lubrication for bolus formation, mastication and swallowing.

The clinical signs and symptoms of mouth dryness outlined above usually increase in severity as the total quantity of saliva decreases; indeed, for some signs to occur (e.g. reddening and fissuring of the tongue) at least a six-fold decrease in resting whole saliva may be required[2]. Where salivary flow is only moderately reduced, definitive clinical signs are uncommon and subjective complaints of mouth dryness may be the only diagnostic evidence of xerostomia. Since few medical centres have the facilities necessary to measure salivary flow rate, the medical/dental practitioner should investigate and treat the patient with only subjective complaints.

Treatment of Xerostomia

A. Mouthrinses, Artificial Saliva, Sialogogues

Xerostomia can be treated with palliative mouthrinses to alleviate the symptoms of mouth dryness, artificial saliva to replace natural saliva, or sialagogues to stimulate salivary flow. Fluoride treatments and remineralizing solutions can also be used in an effort to maintain the health of the teeth.

Mouthrinses which moisten and lubricate the oral cavity are effective only for short periods of time. Some representative examples of mouthrinses that contain water or a humectant glycerin-water mixture are listed in **Table II**. The Thymol-Glycerin Compound mouthwash formula most closely approximates the ion content of saliva. However, the mouthwash contains two ingredients (a mild antiseptic, borax and a counter-irritant, methyl salicylate) which can be toxic if a large amount is swallowed[25]. Therefore, the mouthwash must be diluted (see **Table II**) before use[3].

A synthetic saliva designed to alleviate the feeling of dryness for longer periods of time than mouthrinses, was first developed by Matzker and Schreiber[21] (**Table III**). Artificial salivas currently available in North America (e.g. Moi-stir, Saliment, VA-OraLube, **Table III**) are based on this formula and use a cellulose polymer, carboxymethylcellulose as a substitute for human salivary glycoproteins. Unfortunately, the resulting formulation is imperfect because its viscosity (or thickness) and therefore its flow rate is fixed, unlike natural saliva which can change its flow properties by becoming alternately thicker or thinner[26]. Mucin, a bovine extract of salivary protein has been commercially utilized in Europe to overcome the problem[28]. However, a synthetic analogue rather than an animal extract of salivary protein would be a better alternative because of the possibility of allergic reactions to animal proteins. An artificial saliva containing polyethylene oxide which more closely mimics the flow properties of human saliva is presently being investigated[26].

All saliva substitutes currently available have similar viscosity, pH and ion content (**Table III**). However, Moi-stir has the highest sodium concentration, which may be a consideration for patients on sodium restricted diets who wish to use the preparation frequently. Saliment contains a gustatory agent, lemon oil, and has recently been shown to significantly increase parotid salivary flow when applied six times per day[8].

VA-OraLube is the only artificial saliva which contains fluoride ion (**Table III**) and has been found to increase remineralization of enamel surfaces ***in vitro***[29]. However, current evidence based on ***in vivo*** data[13,14,19] suggests that specific tooth remineralizing solutions, which are buffered at pH=6 may be more helpful than artificial salivas (pH=7) in promoting tooth remineralization; the lower pH allows the calcium to phosphate ratio to be increased, resulting in faster remineralization[13]. Therefore, remineralizing solutions may be useful in serving as adjuncts to artificial saliva in xerostomia patients[6].

Since artificial salivas currently available are inadequate substitutes for human saliva, use of sialogogues to promote endogenous salivary flow may be a better therapeutic alternative. Citrus derivitives, camphor, cayenne pepper and bitters have all been utilized as salivary flow stimulants[2,24]. Among these gustatory stimulants only citric acid and lemon oil have been investigated clinically with favourable results[8,30]. However, since chronic use of acidic solutions such as citric acid can demineralize enamel and contribute to tooth surface loss these sialogogues should be used sparingly in dentulous patients[15]. Masticatory sialogogues such as sugarless candies and gums may also be useful[1], but caution should again be exercised in their extensive use. Some cariogenic bacteria common in xerostomia patients, such as ***S. mutans***, may ferment the sweetening agents in these confections (sorbitol, mannitol, xylitol) and lead to dental decay[1]. A chewing gum which releases artificial saliva has been developed in an effort to promote salivary flow and add to existing saliva stores, but is not commercially available[23].

In addition to gustatory and masticatory sialogogues, pharmacological stimulants which act indirectly on the central nervous system (cholinergic drugs) or directly (anetholtrithion, trithioparamethoxypenylpropene – Sialor®) on the salivary glands have been used clinically. Cholinergic drugs (e.g. pilocarpine, bethanechol and urecholine) which initiate generalized stimulation of the parasympathetic system are clinically effective as salivary flow stimulators[2,12,16]. However, because of the potential side effects which include bradycardia, hypotension and decreased smooth muscle motility[32], the patient population in which they can be used is restricted. Sialor is thought to act directly on the secretory cells of the salivary glands and is generally well tolerated, with the major reported side effect being gastrointestinal upset[7,10,11]. In recent clinical trials, Sialor (at the usual recommended dose of 75 mg per day) has been found to be effective in increasing salivary flow in patients taking antidepressants or major tranquilizers[7] and in individuals with Sjogren's Syndrome[11] and post-radiation mucositis[10]. Liver cirrhosis, jaundice, biliary tract or common bile obstructions are contraindications to its use[5].

B. Dental care

Patients with xerostomia should be on a frequent dental recall schedule to reinforce excellent oral hygiene, restore carious lesions at an early stage and receive profes-

TABLE I

Drugs Causing Xerostomia

CLASSIFICATION	MAJOR EFFECT	MINOR EFFECT
1. ANTISPASMODIC	belladonna alkaloids (Belladenal, Bellergal) glycopyrrolate (Robinul) hyoscine (Buscopan) l-hyoscamine (Levsin) isopropamide (Darbid) oxybutynin (Ditropan) pirenzipine (Gastrozepin) propantheline (Pro-Banthine)	anisotropine (Valpin), dicyclomine (Bentylol), orphenadrine (Diminul), pinaverium (Dicetel)
2. ANTIDEPRESSANT	amitriptyline (Elavil) amoxapine (Asendin) doxepin (Sinequan) protriptyline (Triptil) trimipramine (Surmontil)	clomipramine (Anafranil), desipramine (Norpramin, Pertofrane), imipramine (Tofranil), isocarboxazide (Marplan), nomifensine (Merital), nortriptyline (Aventyl), phenelzine (Nardil), trancylpromine (Parnate), trazodone (Desyrel)
3. ANTIPSYCHOTIC	chlorpromazine (Largactil) chlorprothixene (Tarasan) promazine (Sparine) thioridazine (Mellaril)	haloperidol (Haldol), fluphenazine (Permitil), lithium carbonate (Carbolith), loxapine (Loxapac), mesoridazine (Serentil), methotrimeprazine (Nozinan), perphenazine (Trilafon), piperacetazine (Quide), thiopropazate (Dartal), thiothixene (Navane), trifluoperazine (Stelazine)
4. SKELETAL MUSCLE RELAXANT	cyclobenzaprine (Flexeril)	baclofen (Lioresal), diazepam (Valium), orphenadrine (Norflex)
5. PARKINSONISM THERAPY	benztropine (Cogentin) biperiden (Akineton) trihexyphenidyl (Artane)	amantadine (Symmetrel), benserazide (Prolopa), carbidopa (Sinemet), dextroamphetamine (Dexedrine), levodopa (Larodopa), orphenadrine (Disipal), procyclidine (Kemadrin)
6. ANTIARRYTHMIC	disopyramide (Norpace)	
7. ANTIHISTAMINE		antazoline (Antistine), astemizole (Hismanal), azatadine (Optimine), brompheniramine (Dimetane), chlorpheniramine (Chlortripolon), clemastine (Tavist), cyproheptadine (Periactin), dexchlorpheniramine (Polaramine), diphenhydramine (Benadryl), hydroxyzine (Atarax), promethazine (Phenergan), trimeprazine (Panectyl), tripelennamine (Pyribenzamine)
8. APPETITE DEPRESSANT		chlorphentermine (Pre-Sate), diethylpropion (Tenuate), fenfluramine (Ponderal), mazindol (Sanorex), phenteramine (Ionamin)
9. ANTICONVULSANT		carbamazepine (Tegretol), clonazepam (Rivotril), nitrazepam (Mogadon)
10. ANXIOLYTIC		alprazolam (Xanax), bromazepam (Lectopam), chlorazepate (Tranxene), chlordiazepoxide (Librium), chlormezanone (Trancopal), lorazepam (Ativan), oxazepam (Serax), temazepam (Restoril), triazolam (Halcion)
11. ANTIHYPERTENSIVE	clonidine (Catapres)	atenolol (Tenormin), catopril (Capoten), debrisoquine (Declinax), guanethidine (Ismelin), labetolol (Trandate), methyldopa (Aldomet), metoprolol (Lopressor), nadolol (Corgard), oxyprenolol (Trasicor), pindolol (Visken), propranolol (Inderal), timolol (Blocadren)
12. DIURETIC (Dry mouth may be a symptom of a serious potassium loss)		amiloride (Midamor), chlorothiazide (Diuril), chlorthalidone (Hygroton), furosemide (Lasix), hydrochlorthiazide (Hydro Diuril), indapamide (Lozide), metolazone (Zaroxolyn), methychlothiazide (Duretic), polythiazide (Renese), spiranolactone (Aldactone)
13. MISCELLANEOUS	bleomycin (Blenoxane) busulfan (Myleran) doxorubicin (Adriamycin) isotretonoin (Accutane)	cimetidine (Tagamet), meclizine (Bonamine), procarbazine (Natulan), ranitidine (Zantac), sucralfate (Sulcrate)

From:
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TABLE II

Palliative Mouthrinses

Salt-Bicarbonate Mouthrinse[1]	
Sodium bicarbonate	1 tsp
Sodium chloride	1 tsp
Water	500 ml
(Lemon) Glycerin Mouthrinse[2,3]	
Glycerine	250.0 ml
Spirit of lemon BPC (optional)[3]	2.5 ml
Water	250.0 ml
*Glycerine-Thymol Compound Mouthrinse[4]	
Alcohol	200.0 ml
Borax	90.0 g
Glycerine	450.0 ml
Menthol	1.35 g
Methyl salicylate	0.25 ml
Potassium metabisulphite	2.25 g
Sodium benzoate	10.0 g
Sodium bicarbonate	45.0 g
Sodium salicylate	23.5 g
Thymol	2.5 g
Colour (optional)	5.0 ml
Distilled water	to 4.5 litres

From:

1. 'S-Gravenmade, E.J., Roukema, P.A. & Panders, A.K.: Int. J. Oral Surg. 3: 435-439, 1974.
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*Dilute 15 ml (1 tbsp.) with 50 ml warm water.

sional fluoride treatments. A home fluoride program must also be a high priority, with the most effective program, as documented in radiation-induced xerostomia patients, being 5-10 minutes daily application of stable stannous fluoride (0.4 per cent SnF)[34] or sodium fluoride (0.5 per cent NaF)[4] gel using custom vinyl trays. Remineralizing solutions can be used, in addition to a home fluoride program.

In addition, an important part of any caries prevention protocol in xerostomic patients is a comprehensive diet analysis. Since the restriction of rapidly fermentable carbohydrates such as sucrose, fructose and glucose is fundamental to the control of caries[22], diet counselling may reduce dietary cariogenic challenge and improve overall nutritional status.

SUMMARY

When individual medication cannot be altered to lessen xerostomic potential, the health professional should be cognizant of the physical and emotional distress associated with decreased salivary flow, and be prepared to intervene. The ideal treatment consists of increasing salivary production. A direct-acting sialogogue should be tried for 2-3 weeks[7,10,11]. When this is not possible due to the patient's health or if the sialogogue proves relatively ineffective, a combined approach consisting of artificial saliva or mouthrinses[35], other sialogogues (gustatory, masticatory), professional and home fluoride programs, remineralizing solutions and nutritional assessment should be instituted. Hopefully, research currently being carried out on newer salivary analogues will produce an artificial saliva that will be more effective in replacing the complex functions of natural saliva[26,27].

TABLE III

Commercial Salivary Substitutes

	ARTIFICIAL[1] SALIVA	MOI-STIR®[2,3]	SALIMENT®[4]	VA-ORALUBE[5] * (Xerolube®)
A. Ion Content (mEq/litre)				
Chloride	33.5	20.7	33.9	27.4
Magnesium	0.5	1.1	0.5	1.2
Potassium	21.0	16.1	21.1	20.0
Sodium	14.4	53.9	14.6	22.0
Thiocyanate	1.0	–	1.0	–
Calcium	2.0	2.7	2.7	3.0
Phosphate	4.0	2.0	4.0	7.3
Fluoride	–	–	–	0.3
B. Lubricant-Sweetener	sorbitol	glycerin sorbitol	glycerin sorbitol	sorbitol
C. Flavour	–	mint	lemon	–
D. Preservative	paraben	paraben	paraben	paraben
E. Cost (per ml)	–	0.06	0.09	–
F. Distributor/ Manufacturer	not commercially available	Kingswood Inc. Toronto, Ontario, Canada.	Richmond Pharmaceutical Inc., Richmond Hill, Ontario Canada	*First Texas Phamaceuticals Dallas Texas, U.S.A.

From:

1. Matzker, J. and Schreiber, J.: Z. Laryng. Rhinol. 51: 422-428, 1977.
2. Hankinson, D. (Vice President), Kingswood Canada, Inc. (Personal Communication, 1984)
3. Fruin, M.: Moi-Stir: Product Information, Kingswood Canada Inc., Toronto, Ontario (Personal Communication, 1982).
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DEVELOPING A COMPUTERIZED DATA BASE FOR DEMOGRAPHIC AND EPIDEMIOLOGICAL STUDIES OF ORAL DISEASES

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ABSTRACT

Data analysis in an oral pathology biopsy service can provide demographic and epidemiological information relevant to the diagnosis and treatment of oral diseases. While there have been several analytical studies of oral pathology biopsy services in the United States, there is a paucity of such research in Canada. The establishment of a provincial oral pathology biopsy service at the University of British Columbia provided an opportunity to develop a computerized data base system to study clinical, pathological and demographic parameters. A test group of 502 cases was key punched to a disc file and entered into the University's mainframe computer. Test programs were run using SPSS:9 software. Statistics were generated for various epithelial hyperplasias and preliminary demographic information was analyzed for the initial submitting population of 117 dental practitioners.

SOMMAIRE

L'analyse des données d'un service de biopsie bucco-pathologique peut fournir des renseignements démographiques et épidémiologiques utiles pour le diagnostic et le traitement des maladies buccales. Alors que de nombreuses études du genre ont été faites au États-Unis, c'est la disette au Canada dans ce domaine. La création d'un service provincial de biopsie bucco-pathologique à l'Université de la Colombie-Britannique a été une occasion d'établir un système informatique pour étudier les paramètres cliniques, pathologiques et démographiques. Ainsi, 502 cas constituant un groupe d'essai ont été enregistrés sur disquette et confiés à l'ordinateur central de l'Université. Le logiciel utilisé pour les programmes d'essai a été le SPSS:9. On a obtenu des statistiques pour diverses hyperplasies épithéliales et des renseignements démographiques préliminaires ont été analysés pour un premier groupe de 117 praticiens dentaires qui ont fourni des données.

INTRODUCTION

Recent data indicate that in North America there are 62 oral pathology biopsy programs providing diagnostic and referral services to dental and medical practitioners.[1,2] In addition to a histopathological assessment of surgical material, investigators utilize the collated pathological data to develop classifications of oral diseases, study the prevalence rates of various conditions and clarify aspects of clinical management.[3-5] Several centres have integrated computer-assisted data processing and retrieval systems into their oral pathology services[6-8] in order to make effective and efficient use of the accruing clinical and histological information. One department of oral pathology employs a computer-based recall system that assists clinicians in monitoring patients for possible progression of pre-malignant conditions or recurrences of locally aggressive lesions.[9]

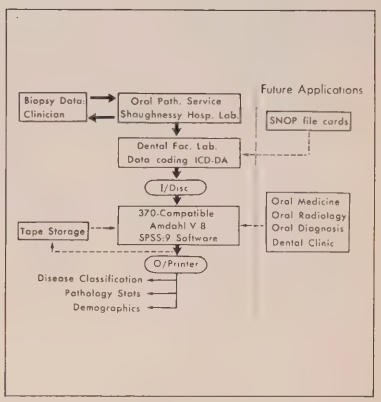

Fig. 1. Flow chart of system for data analysis.

Although Canadian oral pathology biopsy services accessioned 33,804 specimens between 1977 and 1981, there is a paucity of reports dealing with statistical analyses of these data.[2] Organ and Main[10] investigated the utilization of a biopsy service and published limited clinicopathological statistics.

In view of the substantial data accumulating from the accessions in a newly instituted oral pathology service,[11] a study was undertaken to investigate methods of collating and analyzing the clinical and histological information. The initial purpose of the research was to develop a computerized data base for future epidemiological and demographic studies of oral disease in British Columbia.

TABLE I

Work Sheet

SUMMARY

Information Concerning:	Columns Utilized
CARD 1	
1. Shaughnessy Lab Accession #	1 – 7
2. Card #	8
3. Dentist Registration #	9 – 13
4. Patient	
a) birthdate	14 – 19
b) sex	20
c) ethnic origin	21
d) smoking habits	22
5. Clinical	
a) shape of lesion	23
b) colour of lesion	24
c) clinical features	25
d) size	26
e) assoc. tooth vitality	27
f) symptoms	28
g) fistula/sinus present	29
h) date of last treatment	30
i) who provided care in (h)	31
j) assoc. dental pathology	32
k) surgical procedure	33
l) site general	34
m) site specific	35 – 41
n) assoc. tooth	42 – 43
6. General Disease Classification	44
7. Clinical Diagnosis	45 – 59
CARD 2	
1. Shaughnessy Lab Accession #	1 – 7
2. Card #	8
3. Histological Diagnosis	9 – 23
4. SNOP Histological Diagnosis	24 – 35
5. Previous Biopsy Diagnosis	36 – 45
6. Is there another disease present (oral)	46
7. What is the disease in (6)	47 – 51
8. Is there another disease present (systemic)	52
9. What is the disease in (8)	53

TABLE II

Disease Classification

Diagnoses Compiled	No. of Cases	% Total
Normal Tissue	14	2.5
Pulp Disease	5	1.0
Periapical Inflammatory Conditions	82	16.3
Odontogenic Cysts (Inflammatory)	58	11.6
Odontogenic Cysts (Developmental)	33	6.6
Odontogenic Tumours	21	4.0
Epithelial Hyperkeratoses:	43 (Total)	
No Dysplasia	34	6.8
Mild Dysplasia	8	1.6
Moderate Dysplasia	1	0.2
Carcinoma-in-Situ	2	0.4
Inflammatory Hyperplasias (FEP)	38	7.6
Denture Trauma (Specific)	10	2.0
Dermatological Conditions	10 (Total)	
B.M.M.P.	1	0.2
LP	9	1.8

TABLE IV

Statistics relating Epithelial Hyperplasias to Site

EPITHELIAL HYPERPLASIA (ICD-DA CODE)	N	SITE (Topographical Region)
No Dysplasia	34	NOS (15) Buccal Mucosa (11) Alveolar Crest (4) Lip (3) Floor of Mouth (1)
Mild Dysplasia	8	NOS (2) Buccal Mucosa (3) Palate (Hard) (1) Lip (1) Floor of Mouth (1)
Moderate Dysplasia	1	Left Tonsillar Pillar

TABLE III

Comparison of Disease Classification with Three Other Centres

CENTRE	No. of Cases	Odontogenic Tumours (%)	Inflammatory Hyperplasias (%)	Dermatological Conditions (%)
TUFTS 1970	2005	.6	36.0	3.0
University of Oregon 1973-1974	1338	.8	67.6	1.2
Toronto 1974-1975	1034	1.8	52.2	2.4
U.B.C. (Test Group) 1979-1980	502	4.0	44.2	2.0

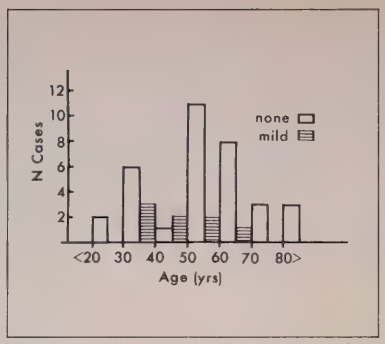

Fig. 2. Epithelial hyperplasias: number of patients relative to ages (decades). None — no dysplasia; mild — mild dysplasia.

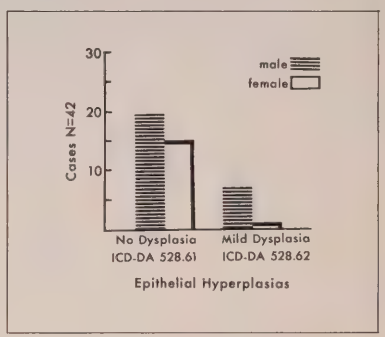

Fig. 3. Epithelial hyperplasia with no/mild dysplasia: relative to sex.

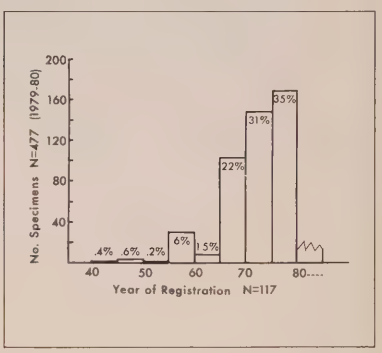

Fig. 4. Number of specimens accessioned according to year of registration of dentist.

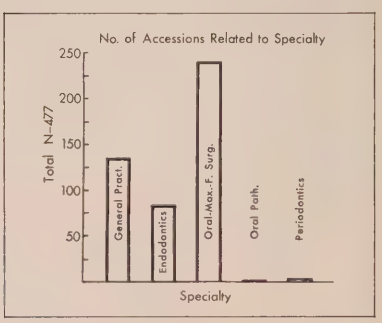

Fig. 5. Number of specimens accessioned according to type of practice of submitting dentist.

METHOD

The system design for this study is illustrated in **Figure 1**. As a first step in the development phase, a program was written for statistical analysis of the clinicopathological and demographic data utilizing SPSS:9 software.[12] Clinical and diagnostic parameters for a test group of 502 cases were coded from a work sheet (**Table I**) adapted from previous studies.[7,8] The data thus coded were input for analysis using the aforementioned program.

Site specification was accomplished using a topographic map conforming to the World Health Organization regional classification of the oral cavity.[13] All diagnoses were coded according to the International Classification of Diseases as applied to Dentistry and Stomatology.[14] To allow for data analysis of hospital surgical pathology files, a SNOP* field was created in the program.[15] All data were transferred to a disc file for entry into the university's computer. The suitability of the coding, assignment of variables and the ability to perform various statistical manipulations were tested on clinical and demographic parameters from the test group of 502 accessions.

RESULTS

A classification of selected oral diseases/conditions from the test group of 502 cases, is presented in **Table II**, while comparisons between the incidences of three representative pathology categories and those from three other centres are seen in **Table III**. The averages suggest that the test group analysis compares favourably with other studies. Nosological preferences may account for the 4.0 per cent incidence of odontogenic tumors in the experimental group.

From the preliminary disease classification (**Table II**), it can be seen that 44 per cent of all accessions in the test group represented benign inflammatory/reactive hyperplastic lesions. There were 45 epithelial hyperplasias, 2.2 per cent of which exhibited histological features ranging from mild to severe dysplasia. Separating out epithelial hyperplasias with varying degrees of dysplasia, statistics relating epithelial hyperplasias to age, sex and site were easily produced (**Figs. 2** and **3**, **Table IV**).

Demographic analyses were performed on the 117 dental practitioners who submitted the test group of 502 accessions. It is interesting to note the percentage of specimens submitted by recent graduates (**Fig. 4**) and those submitted by various specialists (**Fig. 5**). Similar data have been reported previously.[10]

*Systematized Nomenclature of Pathology.

DISCUSSION

It is well established that analysis of clinical and pathological data collected in an oral pathology service provides information regarding the classification and prevalence of various oral diseases in different population groups.[7,8,16,17] Information can be gained regarding the efficiency of diagnostic and referral systems,[18] while the interpretation of utilization statistics may relate to the success of undergraduate, professional and public education programs.[10]

As oral pathology biopsy programs continue to develop within an expanding milieu of computer technology and data processing, a unique opportunity exists to develop a statistically valid registry of oral diseases in various centres. Such information can impact directly on programs for the early detection and treatment of a number of significant oral diseases, including premalignant and malignant lesions. The system developed in this study illustrates that with relative ease, an active oral pathology service has the potential to provide sufficient data to establish a relevant data base of clinicopathological information from which to conduct epidemiological and demographic studies. Depending on the incidence of any one condition and the degree to which one wishes to establish confidence and precision levels, all that is required is the continual collation of data for a specific period of time.[13] In addition to therapeutic and possible prognostic applications, epidemiological studies of oral diseases can assist in the development of oral health care delivery systems which will become increasingly relevant as the nature of dental disease and dental practice change during the next quarter century.

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Reprint requests to Dr. Priddy.

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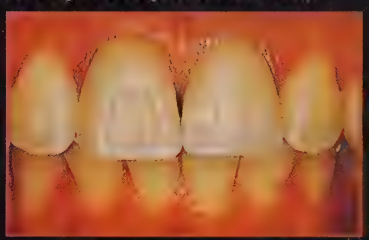

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trol. Bologna, Italy, Pallazzo dei Congressi. Contact: Masson Italia Congressi, Via Baldissera, 4-20129, Milan, Italy.

September 20-27: Annual meeting of the Canadian Society of Forensic Science jointly with the **Society of Forensic Toxicologists** and the **American Society of Questioned Document Examiners**, Hyatt Regency Hotel, Montreal, Quebec. Contact: Executive Secretary, Canadian Society of Forensic Science, 2660 Southvale Cres., Suite 215, Ottawa, Ont., K1B 4W5, 613-731-2096.

September 27-29: Canadian Academy of Endodontics annual meeting, Ottawa Ontario, Four Seasons Hotel, Contact: Dr. Lorne Chapnick, 2200 Yonge St., Suite 1009, Toronto, Ont. M4S 2C6.

September 21-27: 1985 Congress of the Federation Dentaire Internationale is being held in Belgrade, Yugoslavia.

September 29–October 1: Annual Meeting of the Association of Prosthodontists of Canada, Four Seasons Hotel, Ottawa, Ontario. Contact: Dr. Donald Kramer, 506-700 Bay Street, Toronto, Ontario, M5G 1E2.

September 29–October 2: Canadian Dental Association national convention. Ottawa, Ontario, at Canada's Capital Congress Centre. Contact: Canadian Dental Association, 1815 Alta Vista Dr., Ottawa, Ont. K1G 3Y6.

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October 13-18: 6th Congress of the International Society for Laser Surgery and Medicine. Organized by the Israel Society for Laser Surgery and Medicine. Jerusalem, Israel. Contact: DIT Travel/Convention Division, 1183 Finch Avenue West, Suite 203, Downsview, Ontario M3J 2G2, Attention: Rifka Boruchowicz, Convention Secretariat, phone 416-663-9100/07.

October 30: The first national and international scientific encounter of the dental schools, during the XVIII National and International Congress of the Mexican Dental Association. Contact: Admgen Ezequiel, Montes 92, Mexico, D.F., 06030 Mexico 915-566-61-33.

NOVEMBER/NOVEMBRE

November 2-5: 126th Annual Session of the American Dental Association, San Francisco California. Contact: The American Dental Association, 211 East Chicago Ave., Chicago Ill., USA 60611 USA.

November 22-23: The Professional Development Committee of the Ontario Dental Association will present a symposium on Periodontics in Toronto. Contact: Dr. Jeffrey Goodman, Director of Professional Development, 416-922-3900.

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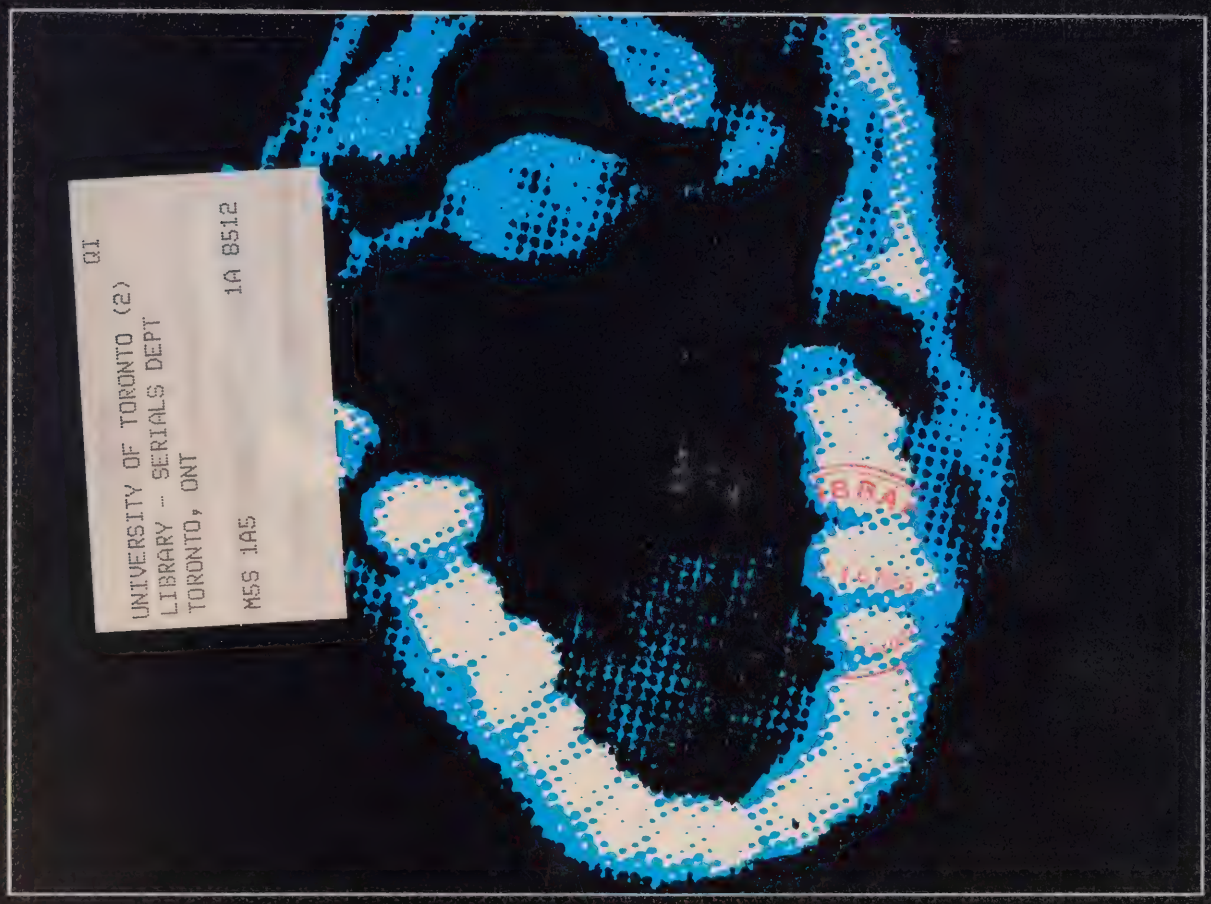

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BEING RIGHT IS NOT ALWAYS ENOUGH

The UN, in its everlasting wisdom, has designated 1985 as "The Year of Youth". What this means in the great scheme of things is anyone's guess, but the impact of this message on our daily lives could be ominous. Does this mean that looking young is not only in, but obligatory? Will there be a proliferation of the ubiquitous, 'top slop of the week', sounds invading our already tortured ears? Will this mean that even the most asinine drivel masquerading as 'teenage philosophy' will have to be given our full attention? Let us hope that common sense will prevail and the views of an older and wiser generation, that has been through the 'mills of time', will be heeded. After all, we've almost perfected the arts of war, pollution, prejudice, political hypocrisy and social grace.

There are, of course, serious aspects to the problems of youth. Unemployment is rampant, disillusion, with seemingly futile social programming, has led to ennui and apathy and the future for many appears bleak and unrewarding. Physical and mental abuse of children is an ever growing phenomenon which is increasing in fact and being reported with greater frequency. Dentists are now obligated, apparently, to report suspected cases of parental brutality to the proper authorities. Neglect of dental disease has also been defined as a form of child abuse and according to at least one provincial association "every dentist has a legal responsibility to report suspected cases. Failure to do so could result in serious legal consequences".

No one with any sensitivity would condone child abuse or neglect. The purveyors of such behaviour must be held responsible for their actions and serious injury should, of course, be prevented where possible. However, the stress level on the already beleaguered practitioner can only be increased with the responsibility of looking for and reporting cases of adult inflicted trauma. Aside from obvious injuries to the teeth, oral tissues and other head and neck areas, signs of sexual abuse must also be monitored, according to Dr. D.C. Brass, Co-editor of "Clinical Management of Child Abuse and Neglect: A Guide for the Dental Professional". He states, "Sexual and emotional abuse, although more difficult to detect, also manifest themselves physically. . . . sexual abuse of children can lead to bruised palates." Most of us have enough trouble already what with herpes, hepatitis and AIDS!

The situation becomes even more unnerving when the matter of 'dental neglect' is evaluated. A guideline from one Children's Service Act reads, "A situation of dental neglect or abuse is considered to exist when a parent or guardian fails to remedy certain oral conditions after having been informed of these conditions". Surely it is obvious, that such a regulation is subject to individual interpretation with inherent social, racial and economic bias. The various spokespersons for children's dentistry have struggled honestly and diligently to create a reasonable list of conditions constituting dental neglect, in response to government pressure for such guidelines. It might be hard to argue with: untreated pain, infection, haemorrhage, trauma and pathology as justifiable grounds for a charge of dental neglect. However, such a clause as, "small carious lesions (in primary teeth) that, if not treated in a reasonable period of time will cause, pain, infection and haemorrhage", should be cause for some misgivings regarding the potential danger for misuse and misinterpretation.

We, as dentists, are united in our desire to help in the maintenance of oral health for everyone. We must, at the same time, respect the right of everyone to choose a dental life style commensurate with their education, intellect, personal fears and cultural background. In spite of all our efforts, some people will still choose to lose, rather than keep, their teeth and will pass this dubious legacy to their children. Such is life! We can try to inform, persuade and even frighten them into 'seeing the light', but it is not our job to 'legislate' a particular concept of dental health. Child abuse is certainly no laughing matter and neglect of obvious lesions often leads to serious dental problems. However, the concept of dentists becoming 'policemen' chills the bone.

Only comparatively recently has our general approach to prevention, and responsibility for health, changed from one of judgement to motivation. It was slow and arduous, but we learned to become 'facilitators' as well as 'healers'. A long hard look should be given to these well meaning child welfare regulations. Let's be sure that we are not taking a retrogressive step back to a, 'do it because I say so', mind set.

Marvin Klotz, DDS, MS, FRCD(C)

***Dr. Klotz**, a Pedodontist practicing in Willowdale, Ontario, is past Editor of the Ontario Dentist. He is currently Newsletter Editor for the Canadian Society of Dentistry for Children and the University of Toronto, Faculty of Dentistry. Dr. Klotz is also a member of the CDA Editorial Board.*

THE ROYAL COLLEGE OF DENTISTS OF CANADA 1985

K.J. Paynter, DDS, PhD, FRCD(C)
President

Editor's Note: *At the time of the late Dr. Paynter's death, he was preparing the following paper which he proposed to submit to this Journal in commemoration of the College's 20th birthday this year. We are pleased to be able to honor his wish in publishing the article herewith.*

It was at its 1962 meeting in Vancouver that the Board of Governors of the Canadian Dental Association approved a recommendation from its Committee on Specialists and Specialization that a Royal College of Dentists be established and that it should have four clear and simple objectives:

1) to promote high standards of specialization in the dental profession:
2) to set up qualifications for and provide for the recognition and designation of properly trained dental specialists:
3) to encourage the establishment of training programs in the dental specialties in Canadian schools; and
4) to provide for the recognition and designation of dentists who possess special qualifications in areas not recognized as specialties.

Three years after the decision by the CDA Board the Act establishing the College was passed by the Parliament of Canada, and on March 18, 1965 was given Royal assent. So this year marks our twentieth birthday, and we are still young enough to have a few identity problems and quite regularly have to explain who we are and what we do. Having emerged from our sometimes turbulent teens unbloodied but not necessarily unscathed, and feeling the need to commemorate a significant anniversary, I thought I would write a short history, an explanation of the College's functions, and what we feel is our role on the national dental scene.

The Act of Incorporation of the College names an interim Council which was to get the show on the road and to act until such time (within six months) as a properly elected Council could be appointed and By-laws approved. While those named to the interim Council were not all specialists, they were certainly most distinguished dentists. Drs. James Zimmerman of Calgary, Remy Langlois of Quebec, Phillip Sinclair of Halifax, Warren J. Riley of Winnipeg, Wesley P. Munsie of Vancouver, Vincent J. Keenan of Sudbury, James P. Coupland of Ottawa and Don W. Gullett of Toronto formed the group. All had served the Board of the Governors of the Canadian Dental Association with great distinction and six of them either had been or were to become CDA President. Dr. Gullett was, of course, the distinguished long-time Secretary of the Association.

Within the prescribed six-month period the first regular Council for the College had been elected from among the five specialties nationally recognized at that time — Oral Surgery, Orthodontics, Paedodontics, Periodontics and Prosthodontics. The first meeting of the elected Council was held on September 17, 1965, with Dr. Frank A. Smith of Vancouver as the first President of the College, Dr. C.H. M. Williams of Toronto Vice-President, and Dr. A.A. Antoni of Toronto the first Registrar-Secretary-Treasurer. The first Convocation was held May 14, 1966 when 98 Charter Fellows received Diplomas.

The Royal College in 1985 operates through a Council of seventeen Fellows, twelve elected from among those holding Fellowship in each of the currently recognized specialties (nine) and in the dental sciences (Oral and Maxillofacial Surgery and Orthodontics each have two Councillors because of their larger numbers). The other Council members include the President, Vice-President, Past President, Examiner-in-Chief and Registrar. The Executive Committee of the Council includes these five officers along with one other Council member appointed from among the Council. The Executive Director of the College is the only full-time staff member. She manages the office, looks after the daily routine of business, arranges examinations, prepares the documentation for committee and Council meetings, compiles the register of Fellows and Members, and produces the College Bulletin now issued twice each year.

Major function

The major function of the College revolves round its examination system, i.e. in "setting up qualifications for" properly trained dental specialists. The latter, according to the College definition, is one who has graduated from an accredited program of study and experience in one of the specialties recognized by the Canadian Dental Association. The qualifications of an individual for recognition by the College are measured by his or her success in these examinations. The examinations are held at two levels. The first, originally called the Part I examinations, could be taken by candidates immediately following their post-graduate training period. The second examination, the Part II or Fellowship examination, is held later — at least five years following the beginning of a candidate's training, in order that the individual may have time to compile case records or to publish papers etc., which can establish their competence and skills in their specialty.

In 1980 two actions took place which changed the Part I examinations rather markedly. First, the College decided that individuals who had been successful in the Part I examinations should be enrolled in the College. Such individuals were to be awarded a certificate designating them as Members of the Royal College of Dentists of Canada with the right to use the initials M.R.C.D.(C). after their names. The Part I examinations became known as the Membership Examinations.

The second action that altered these examinations resulted from discussions with the National Dental Examining Board as to whether it would be possible to add a reasonable measure of the clinical competence of candidates to the examinations without diminishing in any way the quality of the didactic component of the examinations (already with a high clinical application). The request came from a number of provincial licensing boards looking for a better way to assist them in assessing the qualifications of applicants for provincial specialty licensure. The Royal College agreed that if it would be of help to provinces, a clinical component would be added to its Membership Examinations but with no alteration in the written component of the exams. Examination centres, generally two, may vary from year to year depending on the number and the distribution of the candidates with the intent in mind of keeping travel costs, particularly those of candidates, to a minimum.

College examinations

All College examinations are carried out by teams of examiners approved by the Council. The Examiner-in-Chief (currently Dr. Keith Titley of Toronto) recommends the

appointment of Chief Examiners in each discipline. These in turn, in consultation with the Examiner-in-Chief, select their examiners. All are individuals with good experience in conducting examinations in their field and all, with rare exceptions, are Fellows of the College. The regular rotation of examiners ensures no stagnation within the system.

College examinations are held two times each year, the Memberships in June and the Fellowships in December. Supplemental examinations were held for the first time in December, 1984 and individuals in Oral and Maxillofacial Surgery who had failed the Membership Examination the previous June were allowed a supplemental in the failed subjects only. The practice will be carefully monitored and at this time it is uncertain whether it will be continued or extended to other specialties and for all failed Membership candidates.

Since 1977 the College has presented symposia on topics of importance and interest. These have been arranged every second year and presented at the time of and in conjunction with the Annual Meeting of the Canadian Dental Association. They have met with increasing popularity. The next one is to be presented on September 30th, 1985 at the time of the CDA meeting in Ottawa. The topic is 'Facial Pain', and a series of excellent speakers have agreed to discuss both the nature of facial pain and its management. College symposia are open at no charge to all within the profession – specialists, general practitioners and auxiliaries.

Now 349 Fellows

In its relatively short lifetime the Royal College of Dentists of Canada has grown from the original small group of Charter Fellows to a total enrolment of 349 Fellows and 225 Members – nearly half the total number of specialists registered in Canada. There is no doubt that the number will continue to increase as time goes on, since College examinations are becoming more widely known and accepted as the best available measure of the qualifications of individuals to carry out specialty practice.

It is increasingly apparent that the Fellows of the College are assuming roles as leaders in the profession – hardly surprising when one considers that these are the people who through study and hard work have earned the highest certificate it is possible to achieve in their field in Canada, and have proven they are masters of their discipline.

What of the longer-range future? Growth of the Royal College will continue as the value of the College examinations is accepted by licensing agencies, by teaching institutions and by others as the best available measure of specialists' competence. As their popularity increases College symposia will no doubt be presented more frequently, and perhaps will even expand into annual scientific meetings of specialists of all the disciplines – meetings where specialists of all kinds could meet to hear and discuss papers in their own disciplines and in others as well. The College Annual Meetings may become the forum for hammering out many of the multi-disciplinary problems affecting patients.

We plan for and look forward to the day when all specialists in dentistry in this country will be Fellows of the College, just as those in Medicine and Surgery are Fellows of the Royal College of Physicians and Surgeons of Canada. Then we will have truly succeeded in promoting the highest standards possible of specialization within the profession. The profession, the specialties, education and patient care will all be the better for it.

'A LIFE TO REMEMBER' KENNETH JACK PAYNTER, DDS, PhD, FICD, FRCD(C) 1918-1985

Editor's note: *Following the death of the outstanding dentist, researcher and administrator, Dr. Kenneth J. Paynter, as a result of a tragic automobile accident, an eminent colleague and close friend, Dr. John B. Macdonald wrote the accompanying in memoriam message. We believe many of Dr. Macdonald's sentiments are shared by a multitude of colleagues in the dental profession across Canada, and far beyond its borders.*

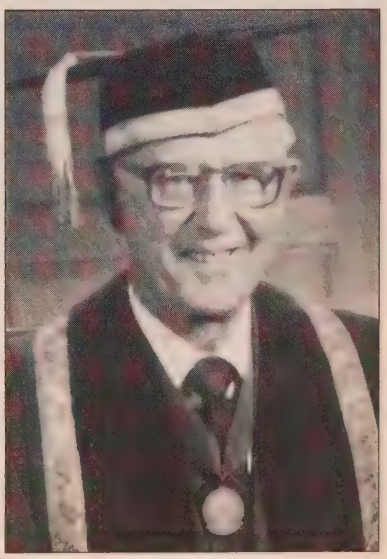
Jack Paynter's life was a life to celebrate. As a superb teacher, scholar in his field and experienced administrator, he served the profession he loved with courage and dedication for forty years. He was an unforgettable character, a champion of change, a critic of the status quo, a happy warrior urging his colleagues toward higher ground. His field of battle was the lecture theatre, the common room, the Senate chamber, the corridor, – wherever an audience would listen. Gregarious, charming, good-humoured, outspoken, and with arms and legs askew, he would pepper his listeners with salty arguments for often unfashionable causes.

His career in dentistry began in 1939 as an undergraduate in the Faculty of Dentistry, University of Toronto. Even then his hair was silver gray, an incongruous prematurity in a vibrant personality. Torontonensis, the University year-book, noted that "the boys call him 'Pop' but there's a lot of zip in the old boy yet."

Indeed there was. He graduated with honors in 1944, served in the Canadian Dental Corps for three years, engaged in private practice in Ottawa for another two, and then returned to academic life, acquiring a PhD in anatomy from Columbia University in 1953.

He joined the faculty of the University of Toronto in 1951 and was one of the charter members of a small group who created the Division of Dental Research. We worked for less than a decent living, in crowded quarters with minuscule support and an uncertain future. Yet Gordon Nikiforuk, another member of the group, commented recently that "those early years were the most exciting, intellectually stimulating and creative of our entire careers." We shared a common cause and, thrown together, we goaded, challenged and provoked each other to add new dimensions to dental research and education. Jack Paynter was among the leading provocateurs. He valued achievement and good performance in his friends and himself but would not tolerate any inclination to self-importance. The slightest display of pretentiousness was shot down with withering and colourful humour.

Jack remained with the University of Toronto for 16 years, rising rapidly to the rank of full professor and Chairman of the Division of Postgraduate Studies. In 1956 he wrote a report for the University of Manitoba leading to the establishment of a new Faculty of Dentistry in that University. The views he expressed in that report were controversial and earned him the anger of many of his colleagues. They were,



The late Dr. Kenneth J. Paynter

nevertheless, honest, courageous and imaginative, calling for compulsory internships for dental graduates and expanded use of dental hygienists. It is a measure of the man that his commitment to meeting the public health responsibility of his profession could not be deterred by the anticipation of censure.

Jack became the founding Dean of the College of Dentistry of the University of Saskatchewan in 1967 where he remained till 1973. Once again his innovative mind caused him to experiment with the use of dental auxiliaries for simple operative procedures and, predictably, he found himself once again the centre of controversy. He was not a respecter of convention; his fertile mind constantly sought a better way and earned him the reputation of crusader. He was, in short, the conscience of the profession he loved.

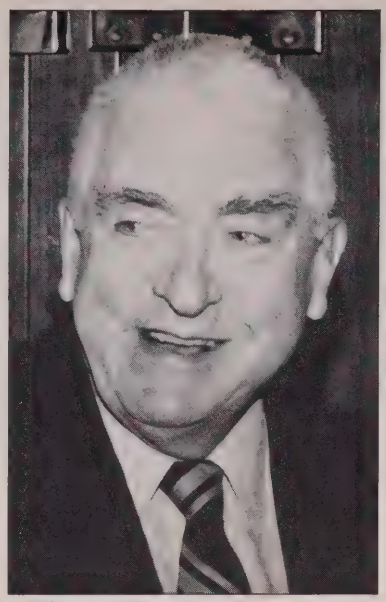
In 1973 Jack moved to the Medical Research Council serving first in the capacity of Director of Grants, then Director of Awards, then Director of Special Programs and finally Director of Special Studies. He retired in 1983. While with the Council he continued to press the case for support of high quality research and the cultivation of young scientists to give continuity to the national medical and dental research enterprise.

Through the years of his career Jack held many important posts where his leadership and drive advanced the cause of education and research. Among them were the Chairmanship of the Council on Research of the Canadian Dental Association, Chairmanship of the Associate Committee on Dental Research of the National Research Council and President of the Canadian Dental Research Foundation. He was active as a Fellow and officer of the Royal College of Dentists of Canada, serving as Examiner-in-Chief, then Vice-President and capping his career as President for the term 1983-5.

On January 30, 1985 Jack Paynter died as the result of injuries suffered in an automobile accident. He leaves his wife, Kay (who was still unconscious from the accident when this was written), a son Jim, daughter Susan, son Terry and four grandchildren, Ann, Jason, Karrie and Darcie.

With his death dentistry has lost a distinguished and colourful leader. Beneath his facade of irreverent wit, Jack Paynter was in truth a sentimental man, loyal to his friends, proud of their achievements, modest about his own, and understanding of those whose views he did not share. He was loved by his friends and his family and he will be remembered and missed by all who knew him.

John B. Macdonald
February 25, 1985



Dr. Howard L. Mussells

DR. HOWARD LINDSAY MUSSELLS

FORMER CDA PRESIDENT DIES IN MONTREAL

Dr. Howard Lindsay Mussells, President of the Canadian Dental Association for the 1975-76 term, died recently in a Montréal hospital after a valiant battle against cancer. He was 68.

Born in Montréal, Dr. Mussells was educated in King's School and Westmount High School. He was graduated from the Faculty of Dentistry, McGill University, in 1941.

He heeded the call to service during the Second World War and served with the Canadian Dental Corps from 1941 to 1946.

Following his wartime service, Dr. Mussells established a practice in Westmount, Québec.

Landmark year for CDA

Several of the most important events in CDA's history occurred during the presidency of Dr. Mussells.

He had served as the building committee chairman for the new CDA headquarters building in Ottawa, and that major project was completed during his term of office.

An avid supporter of the move to Ottawa, Dr. Mussells wrote in a January, 1976, editorial in this Journal, that "the Association will now be in a better position to represent its members in advocating changes in personal income tax on such things as continuing education expenses, changes in the excise tax on dental supplies and equipment, and for responsible manpower and immigration policies."

The year 1976 also saw the CDA embark on carrying out the recommendations of a special Task Force to consolidate CDA goals and objectives – "to make the CDA more responsive to its individual dentist members and its provincial corporate bodies" – Dr. Mussells noted.

In order to spread the message of the importance of good dental health, the former National Dental Health Week was extended that year into National Dental Health Month, and became, for the first time, a country-wide observance.

Active in Québec milieu

Dr. Mussells had been active in the Montréal and Province of Québec dental circles for some time before becoming CDA President. He had served as President of the Montréal Dental Club and the College of Dental Surgeons of the Province of Québec (now the Order of Dentists of Québec). He had been a governor of the Order for nine years and a member of its executive council for 10 years.

He had been a member of CDA's Board of Governors for 11 years.

Dr. Mussells had also served as a lecturer in the Faculty of Dentistry at McGill University from 1947 until 1975.

Interested in sports

Active in sports activities while he conducted his practice in Westmount, Dr. Mussells was a member of the Royal Montréal Curling Club and the Montréal Badminton and Squash Club.

He is survived by his wife, Elizabeth (Gibb) and three brothers: Lloyd, of Kingston, Ont., Campbell, of Vancouver and Brock, of Niagara Falls, Ont.

CFDE SUPPORTS SUMMER TEACHING INSTITUTE

John Eisner, DDS, PhD

Overview

The development of teaching and evaluation skills by faculty members is a challenge which faces all dental schools. Challenges such as this one can be addressed either individually within each Canadian Faculty of Dentistry or, perhaps with greater impact, through a national effort. After much thought within the Association of Canadian Faculties of Dentistry (ACFD/AFDC) it has been determined that the preparation of our faculty members for their teaching and evaluation roles is a task that can be aided by a national effort. The Canadian Fund for Dental Education (CFDE) was asked to provide major sponsorship of a Summer Teaching Institute for recipients of CFDE Fellowships and any other faculty members who wish to enrol.

The Specific Problem

Almost all full-time faculty return from their graduate education with little or no exposure to the art and science of teaching within a professional school. While some gifted individuals develop excellent teaching skills through self-study and/or interaction with other University colleagues, many are unprepared for the sophisticated dynamics of the adult teaching/learning process as it applies to professional education. Over the past 20 years, a significant volume of literature, supportive materials and specific teaching techniques have been developed which focus on dental education. It would seem that a reasonable, and desirable, accompaniment for the appointment of all new faculty would be the completion of an organized teacher preparation program designed for dental educators. Such a program for full-time faculty does not exist in Canada. However, the means and resources for its development are at hand.

It has also been universally recognized that the role of part-time faculty is of major importance. Almost all part-time faculty begin their teaching careers with little more than an introduction to their colleagues, and the offer of a clean lab coat. Concerns within our Faculties to accomplish more in less time require part-time faculty members to be better prepared for their clinical and laboratory teaching roles. A desire for more reliable clinical evaluation requires part-time faculty members to become part of a closely calibrated team, all of whom are equally competent and confident in their ability to accurately evaluate student progress. These expectations for our part-time faculty can no longer be achieved through "coffee-room" introductions and "on-the-job" hints. Basic teacher preparation programs designed specifically for the part-time clinician need to be developed. This will now be possible.

History

For many years, members of the ACFD/AFDC Education Committee have reviewed the available methods of improving "teaching skills" in Canadian Faculties of Dentistry. Four methods of acquiring such teacher training include:

1) Exposure to education courses during graduate school specialty training.
2) Exposure to local faculty development programs.
3) Exposure to the Canadian Dental Association (CDA) and specialty Association sponsored teaching conferences.
4) Exposure to the Biennial Conferences on Canadian Dental Research and Education which are organized by ACFD/AFDC.

While each have their place, the overall impact of these various methods has been minimal. Few graduate programs in Dentistry offer formal education courses. Rarely do students seek such additional course work. The 1981 Faculty Development survey conducted by the ACFD/AFDC Education Committee showed that most "faculty development" activities in Canadian Faculties of Dentistry are ad-hoc and very limited. Many teaching conferences are discipline oriented, and while most are extremely successful, they do not usually bear direct impact on an individual faculty member's teaching skills. Similarly, the Biennial Conference is usually organized to address broader issues and is not specifically designed for new faculty.

In 1979 the ACFD/AFDC Education Committee concluded that the direction that was most likely to produce the desired results would be a "national" Summer Teaching Institute designed chiefly for new faculty members. This proposal was first made in an ACFD/AFDC response to a request from the Canadian Fund for Dental Education for suggestions on funding priorities. In 1981, the ACFD/AFDC House of Delegates endorsed a series of recommendations in a Report on Faculty Development Activities in Canada encouraging a greater commitment to these activities in each Faculty. Included in this report was a revised proposal for CFDE funding of a Summer Teaching Institute with follow-up programs, directed toward both full and part-time faculty, to be held within each Faculty. In May of 1984, the Board of Trustees of the Canadian Fund for Dental Education awarded $60,000 ($20,000 in each of the next three years) to ACFD/AFDC in support of the proposed Summer Teaching Institute and its follow-up activities.

Institute Format

The first two week Summer Teaching Institute will be offered from June 16-28, 1985 at the UBC Conference Centre. Faculty for the program include Dr. Bruce Squires, (Director, Health Sciences Educational Development, U.W.O.) and Dr. Richard Lewis, (Professor of Communication Studies, University of Windsor). Dr. John Eisner, Assistant Dean at the Dalhousie Faculty of Dentistry is co-ordinating the Institute and will also be its third faculty member.

The curriculum will include a basic overview of educational principles as applied to professional education and will emphasize a "hands-on" approach to the many tasks associated with course design, teaching and evaluation. The complexities of one-on-one clinical teaching will be explored in depth and all participants will take part in a "micro-teaching" experience where they will be video taped while teaching. Later, along with other institute participants, they will be asked to critique their presentations. Criterion referenced evaluation systems, instructor calibration, and course evaluation techniques will also be included in the curriculum.

While the summer program is a major feature of this proposal, the long term success of this faculty development project is also dependent on its second component, a follow-up program aimed specifically at part-time faculty, to be held at five different Faculties each winter. Over the two year period all ten Canadian Faculties would be included.

Appreciation

ACFD/AFDC and the ten Canadian Faculties of Dentistry appreciate the support shown by the Canadian Fund for Dental Education in this attempt to assist new faculty as they learn to be good teachers. All contributors to the Fund, whether individual dentists or corporate donors, should be pleased with this new initiative on the part of the Fund to support dental education in Canada.

This article was submitted by Dr. John Eisner who is the current Chairman of the ACFD/AFDC Education Committee. This committee is responsible for co-ordinating all activities related to the CFDE grant for Summer Teaching Institutes.

EXECUTIVE DIRECTOR'S REPORT

1985 Interim Meeting of the Board of Governors – Highlights

The following is a report on some of the highlights of the Interim Meeting of the CDA Board of Governors, held in Ottawa on March 8-9, 1985.

Audited Financial Statements

The Board reviewed and approved the audited financial statements for the Canadian Dental Association and the Canadian Dental Research Foundation for the year ending December 31, 1984, prepared by the firm of McCay, Duff & Company. The balance sheet and statement of expenses are published in this issue of the Journal.

Manpower Symposium

The Association is proceeding with the organization of a National Symposium on Dental Manpower in Canada, following the approval of the Board of this major project. It is anticipated that the symposium will act as a forum for discussion of dental manpower, and potential solutions to perceived problems in this area. The Board endorsed the aim of the symposium – to bring together all those with concern in the dental manpower area. Tentative dates for the symposium are October 18 and 19, 1985, with the location to be determined in the very near future.

A Strategic Planning Process for the CDA

Board approval was given for the Association to proceed with a Strategic Planning Process for the CDA during 1985-86. The need for such a process was identified by the Executive Council in the Fall of 1984, and major progress has already been achieved to date. Basically, the Strategic Planning Process can be broken down into four major tasks for the Association as follows: *Organization Clarification* – the examination and review of the roles and responsibilities of senior officials and staff members of the CDA; *Development of the Philosophy of the Organization* – the goals and objectives of the Association are to be redefined and determined; *Development of a Planning System* – to provide a logical and sequential method of activity planning; and *Development of Government Relations*.

Per Diems and Honoraria

An extensive review of the present policy on Per Diems and Honoraria and recommendations for increases based on cost of practice information from across Canada was presented to the Board in a Report of the Ad Hoc Committee on Per Diems. The Board approved increases based on the findings of the report, to more accurately compensate those who offer their services to the Association.

Product Acceptance Committee

The Board approved an expansion of the present guidelines of the Committee on Product Acceptance to cover consumer products used to promote dental health and further approved the re-naming of the Committee to *The Committee for Consumer Products Recognition* to more accurately reflect the Committee's expanded role.

Salaried Dentists Committee

Following review of a report from the Salaried Dentists Committee, the Board approved a change in the terms of reference to provide for a further provincial representative on the Committee. On recommendation of the Executive Council the Board further approved that the present policy regarding the fee structure of salaried dentists not be altered.

The CDA's need for a policy statement of a philosophical nature regarding the requirements for dentists to attend continuing education courses was stressed by the Committee. The Board has endorsed the policy that the Association supports the premise that continuing education courses are an essential and vital element in fulfilling dentists' public and professional obligations to maintain their standard of professional excellence.

CDA Appointments

The Board was updated on the following CDA Appointments which had been made since the last meeting of the Board in September, 1984: Dr. E.F. Allison of Calgary and Dr. J.C. Giguère of Quebec City have been appointed to the Executive Council; Dr. John Hardie of Ottawa has been appointed Chairman of the Editorial Board; and Dr. D.E. MacFarlane of Vancouver has been appointed Chairman of the Committee on Third Party Dental Plans.

At the 1983 Annual Meeting of the Board, approval was given to the appointment of a lay representative to the Council on Education and Accreditation. The Board of Governors has approved the appointment of Miss Jacqueline Roberts to fill this role on Council.

Membership

A highly successful Orientation Workshop was held in Ottawa on October, 1984 for representatives from component societies in Ontario and Quebec. Due to the value of this initial workshop, it is planned to hold a follow-up for those who were unable to attend the October session.

Due to the importance of representation from the two voluntary provinces (Ontario and Quebec) on the Membership Committee, the Board has approved the requirement that the Executive Council Members from these two provinces sit as members of the Committee.

Taxation Committee

The Taxation Committee reported on successful representations to Revenue Canada – Customs & Excise which resulted in the exemption of dental impression materials from Federal Sales Tax under the Excise Tax Act.

The Joint Professional Committee (Canadian Dental Association, Canadian Bar Association, Canadian Medical Association and the Canadian Institute of Chartered Accountants) has renewed its representations to the new Minister of Finance, that the recommendations of the Parliamentary Task Force on Pension Reform be implemented. Many of these recommendations, including the increase to the RRSP limit, were based on original representations from the Joint Professional Committee.

The Committee also reported on the *Removal of Non-Qualifying Business Status, Incorporation of Dental Practices and Professional Management Companies*. Further and more complete information on these matters will be included in the next CDA Communiqué or future issues of the Journal.

FDI 1993

The Board was updated on the proposal that the CDA host the 1993 Congress of the Federation Dentaire Internationale. Two possible locations, Montreal and Vancouver, have been identified, and presentations from those cities will be made at the Annual Meeting of the Board in October, 1985.

CDA Conventions

Quebec City has been confirmed as the site of the CDA's 1987 Convention. The Alberta Dental Association has confirmed their acceptance of the CDA's offer to hold its 1988 Convention in Edmonton.

Council on Dental Materials & Devices

The Council on Dental Materials & Devices presented to the Board an updated statement developed by them on the Guidelines on Safe Mercury Handling. These Guidelines will be printed in a future issue of the Journal and made available to the profession for use in dental offices.

National Dental Health Month – Dental Awareness Program

The Board was informed that the official "kick-off" of the CDA's Dental Awareness Program will be National Dental Health Month in April of this year. Further information is to be provided on this event in the Journal.

Backpayment of Membership Dues

Based on a recommendation from the Council on Student Affairs the Board has approved an amendment to the existing policy on backpayment of membership dues by students to include a fine, consisting of double the fee for each year missed. This fine would apply only to actual years missed, not to the year that membership commenced or resumed.

Hubert Drouin
Executive Director

1984 FINANCIAL REPORT

The audited financial statements of the Canadian Dental Association were adopted at the interim meeting of the CDA Board of Governors. The Balance Sheet and Statement of Revenue and Expense for the year ended December 31, 1984 have been extracted from the Auditors' Report and are presented for your review. Copies of the complete audited statements as prepared by McCay, Duff & Company may be obtained from the CDA Resource Centre.

CANADIAN DENTAL ASSOCIATION BALANCE SHEET AS AT DECEMBER 31, 1984

	1984	1983
ASSETS		
CURRENT		
Cash	$ 826,513	$ 995,962
Cash – Building Contingency Fund	20,883	20,800
Deposit certificate	750,000	500,000
Accounts receivable	74,710	78,840
Inventory (note 1)	54,706	39,348
Prepaid expenses	50,125	90,393
	1,776,937	1,725,343
FIXED (notes 1 and 2)	1,413,977	1,303,200
	3,190,914	3,028,543
TRUST ASSETS		
Cash	58,313	61,742
Deposit certificate	–	1,000
Prepaid expenses	3,852	–
Library books and furniture (at nominal value)	1	1
	62,166	62,743
	$3,253,080	$3,091,286
LIABILITIES		
CURRENT		
Accounts payable	$ 129,440	$ 110,879
Deferred revenue	506,018	595,577
Current portion of long term debt	18,000	18,000
	653,458	724,456
LONG-TERM DEBT (note 3)	386,387	404,387
	1,039,845	1,128,843
MEMBERS' EQUITY		
SURPLUS	1,141,479	1,018,887
EQUITY IN FIXED ASSETS (note 4)	1,009,590	880,813
	2,151,069	1,899,700
	3,190,914	3,028,543
TRUST EQUITY		
Library Trust Fund	54,964	56,166
The Grieve Memorial Lectureship Fund	7,202	6,577
	62,166	62,743
	$3,253,080	$3,091,286

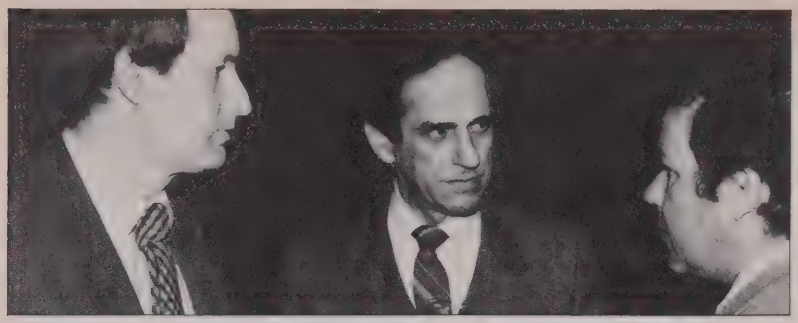
CANADIAN DENTAL ASSOCIATION STATEMENT OF REVENUE AND EXPENSES FOR THE YEAR ENDED DECEMBER 31, 1984

	1984		1983
	Budget	Actual	Actual
REVENUE			
Fees (schedule A)	$2,132,774	$2,190,815	$1,902,367
Grants	44,000	29,264	41,994
Journal (schedule C)	416,000	405,013	383,743
Publications	70,000	70,990	59,338
Interest	60,000	156,543	115,131
Rental	142,004	133,487	116,307
Other (schedule B)	28,000	30,052	42,488
Convention	–	–	373,914
	2,892,778	3,016,164	3,035,282
EXPENSES			
Honoraria and per diem	195,825	189,406	175,505
Salaries and benefits	595,330	610,354	557,814
General and administration (schedule D)	282,500	310,545	249,214
Convention	–	–	350,517
Conferences	29,000	26,995	25,968
Journal (schedule C)	467,500	505,928	412,321
Other publications (schedule E)	75,500	88,118	85,166
Travel and meetings (schedule F)	395,225	389,086	334,940
Unbudgeted Projects (schedule F)	50,000	113,765	20,848
Property management	283,400	241,266	225,900
Dental Health Month	45,000	73,927	30,503
Accreditation surveys	40,000	32,814	31,040
Dental Aptitude Program	67,500	80,524	56,999
Membership campaign	25,000	27,634	16,257
Student affairs	23,500	17,394	19,885
F.D.I. administration	20,000	13,889	15,139
Consulting fees	20,000	37,756	20,919
Grants and sponsorships	10,000	5,394	10,614
	2,625,280	2,764,795	2,639,549
EXCESS OF REVENUE OVER EXPENSES FOR THE YEAR	$ 267,498	$ 251,369	$ 395,733

SCENES FROM THE SOCIAL SIDE OF THE INTERIM BOARD OF GOVERNORS MEETING MARCH 8-9, 1985.

Photos by Carolyn Hackland

CDA President Dr. Ralph Crawford (L) shares a joke with Dr. Kenneth Bentley, Dean of the Faculty of Dentistry, McGill University



(L-R) Dr. Kevin Roach, Ontario; Dr. Bruno Martinello, Alberta; and Dr. J.G. Thompson, New Brunswick, share a serious moment at the cocktail reception following the first day's deliberations.

(L-R) Hubert Drouin, departing Executive Director of the CDA, was in attendance at his last Board meeting. He is shown at far left, with (L-R) Dr. Serge Vanry, newest member of the Board from British Columbia, Dr. J-C Giguère, member of Executive Council from Quebec and Dr. Ralph Barolet, Chairman of the Council on Dental Materials and Devices.

CONGRÈS DE L'ADC

— 29 SEPT - 2 OCT. —

CDA CONVENTION

Ottawa — A capital place to learn

Delegates to the 1985 CDA Convention will have an opportunity to participate in an exciting panorama of dental knowledge and education.

Innovative features of this year's convention are:

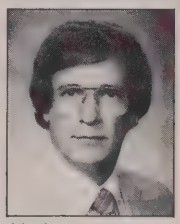
1. The introduction of *pre-convention participation courses* (further details are provided at the end of this article).
2. The development of a *graduate students' forum* for discussion of further developments in dental research and clinical studies.
3. The expansion of the Scientific Program to *three full days*.
4. The selection of an *international team of clinicians* from Australia, Canada, Denmark, the United Kingdom and the United States.
5. *A Health Screening Project*, which is part of a major CDA investigation of the environmental hazards of dentistry.

Future editions of this Journal will feature details of the scientific program for Tuesday, October 1 and Wednesday, October 2. This article will discuss topics for presentation on Monday, September 30.

Monday, September 30 — Morning Session 9 a.m. to Noon

The first scientific session will be devoted to discussions of TMJ dysfunction, computers and facial pain.

Grieve Memorial Lecture Diagnosis, Prevention and Treatment of TMJ Dysfunction in Orthodontics



Dr. E.H. Williamson — Past Chairman of Orthodontics, Medical College of Atlanta, Georgia, is this year's Grieve Memorial Lecturer.

He will discuss; the physiologic mandibular position, the effect of occlusal schemes and the use of repositioning splints and functional appliances.

Should There Be a Computer in Your Practice?

Dr. T.L. Snyder — President of a dental education and marketing company, and Editor of "Focus on Dental Computers" — will provide an overview of the key factors to be considered in determining whether a dentist requires a computer. This will include a discussion on the types of dental computers, their tasks, costs and benefits.

Royal College of Dentists of Canada Symposium on Facial Pain

Dr. R. Melzack — Professor of Psychology, McGill University, Montréal — will present, *Current Concepts of Facial Pain*.

Deafferentation

Dr. B.J. Sessle — Professor of Physiology, University of Toronto, will discuss this subject.

Monday, September 30 — Afternoon Session — 2 to 5 p.m.

The second session will include — the graduate students' presentations, paedodontics and facial pain.

Graduate Students' Presentations

Students enrolled in Canadian Dental Graduate Programs will present papers on their research or clinical investigations.

The Changing Face of Paediatric Dentistry

Dr. R.K. Hall, of the University of Melbourne, Australia, will discuss how the reductions in dental caries has emphasized the need to understand and diagnose developmental problems. He will illustrate current techniques for the treatment of infants, children and adolescents with special care requirements.

Royal College of Dentists of Canada Symposium on Facial Pain

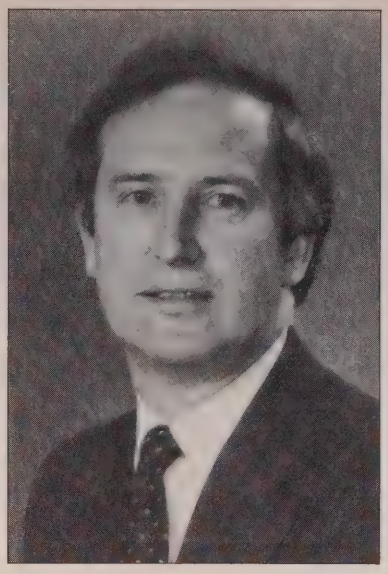
Management of Patients with Chronic Facial Pain
The topic will be discussed by; *Dr. R. Remick* – Department of Psychiatry, University of British Columbia, and by

Dr. J.D. Loeser – Director, Pain Centre, University of Washington,Seattle.

The Pre-Convention Participation Courses

For the first time at a CDA Convention, the scientific committee is organizing a series of participation courses which will be held on Sunday, September 29, at convenient locations throughout the City of Ottawa. It is intended that these limited enrolment courses will include:

- Custom Staining – Porcelain Crowns
- Custom Staining – Resin Restorations
- Emergency Office Procedures
- Hydrocolloid Techniques



Dr. John Hardie

- Endodontics Course
- Computers in Dentistry
- Clinical Photography
- Quality Control in Radiology

The fee for the courses will vary from $150 to $250. Each course will have a local co-ordinator who will ensure, before the convention, that each participant has received appropriate maps, handouts, and other pertinent details. The participation courses will only be available to convention registrants.

Details regarding the exact fee, enrolment limits, and application procedures, will be included in the Convention Registration Package, which will be forwarded to all dentists. The latest date for acceptance of applications for the courses will be August 16. Fees will be refunded if courses have to be cancelled because of insufficient enrolment.

J. Hardie, BDS, MSc, FRCD(C)
Scientific Chairman
1985 CDA Convention

DETAILS OF SOCIAL PROGRAM AT CDA CONVENTION '85

The calibre of the social events at the 1985 CDA Convention in Ottawa will meet the high standards set in recent years, and quite possibly, exceed them.

Dr. Bruce and Dorothy Robinson, co-chairpersons of the social program, advise that the opening spectacular, "Canada on Parade" on Sunday evening, September 29, will be a memorable one.

This registration party – an evening of Canadian culinary delights, soft music and a rousing salute to each Canadian province, will be staged at the Ottawa Congress Centre.

The outstanding musical extravaganza "will present Canadiana at its best and we invite you to come with old friends and new, to welcome your province to the start of the best CDA Convention ever," Dr. Robinson told the Journal.

The major social event, the President's Gala, is scheduled the following evening. On this occasion, there will be dancing to the "Big Band Sound", following fine food and wine.

Two outstanding orchestras will feature continuous light romantic music. It will be an evening of entertainment and relaxation, with no formal presentations or speeches.

Early Ottawa Valley lore

On Tuesday evening, October 1, at the beautiful Palais des Congrès in Hull, Québec, a scenic 10-minute ride from the Ottawa Congress Centre, early Ottawa Valley lore will be the theme.

The "Bytown Bash" will be an evening of food, refreshments, dancing, contests and generally, fun activities.

Free bus transportation will be provided both ways, from and to the Ottawa Congress Centre.

Proper dress for the party will be early settler attire, or plaid shirts and jeans. "Studied carelessness," is Dr. Robinson's definition. Prizes will be awarded to the best dressed "lumberjacks" and contest participants.

For dancing, the Apex Jazz Band and the Family Brown (Canada's award-winning country & Western group) will guarantee lively music.

The feature presentation will depict the colorful Ottawa Valley lumbering traditions and in addition there will be a strong man show. Audience participation should make the latter a fun event.

Those inclined toward late evening revelling may join a tour of zesty Hull night spots from midnight until 2 a.m.

Wednesday luncheon

In the Westin Hotel ballroom on Wednesday, October 2, a notable luncheon has been scheduled. At this event, included in the registration, for dentists and spouses, the speaker will be Jack Donohue, coach of Canada's Olympic basketball team. He is acclaimed as one of Canada's best after-dinner (or luncheon) raconteurs, because of his witty anecdotes on political and sports subjects.

Spouses' program

On Sunday, September 29th, following registration, spouses may attend the registration party, "Canada on Parade".

On Monday, September 30, spouses may enjoy an Early Bird Fitness Class and later, a bus tour of the Nation's Capital. Other events include a luncheon, fashion show and a visit to the National Arts Centre for a fashion show, (courtesy of Holt Renfrew Ltd.) In the evening, they may attend the President's Gala (a separate ticket item).

An Early Bird Fitness Class will also be held on the following morning, October 1st. Two tours have been planned for that date. The first is a house and garden tour and luncheon. Five of Ottawa's most fascinating homes and embassies are on the itinerary, and the luncheon will be at the Ottawa Hunt and Golf Club. In the evening, registration includes the fun at the "Bytown Bash."

The other tour is in the form of a leisurely morning drive through historic Lanark County in all its autumn splendor. Lunch will be provided at a country church and maple products and crafts will be available for purchase. The afternoon can be devoted to browsing through an antique shop, a silverware shop, museums, clothing stores and outlets.

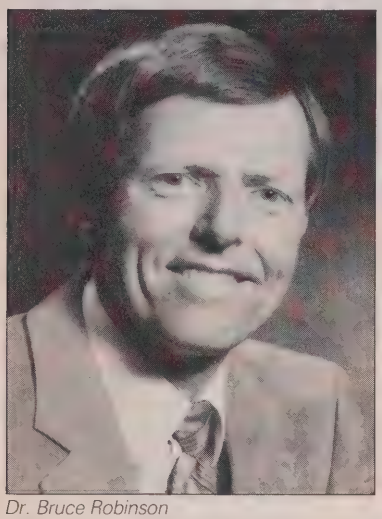
Wednesday morning, October 2, is free, but the luncheon with delegates (included in the registration) will allow spouses to enjoy the speaker, Jack Donohue, coach of Canada's Olympic basketball team.

The spouses' registration also includes access to all open scientific sessions and exhibits, and the Sunday evening Registration Party. The Hospitality Suite will also be open at regular hours for fellowship.

Enquiries

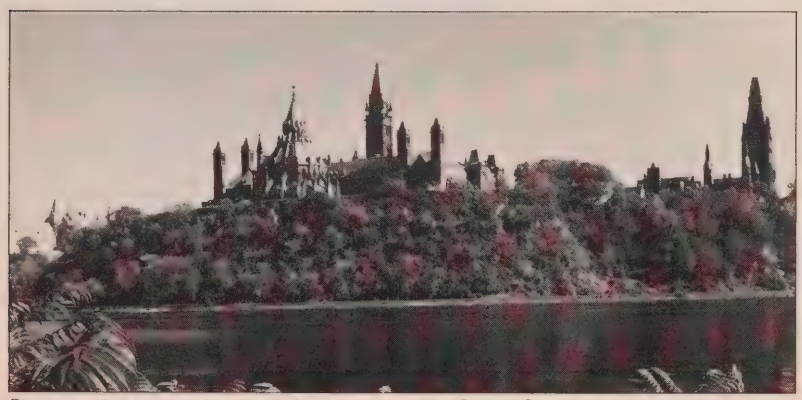
Anyone – dentist, auxiliary, assistant or prospective exhibitor – who has a question about the upcoming Convention '85 should address it to:

The Canadian Dental Association
1815 Alta Vista Drive,
Ottawa, Ontario K1G 3Y6
or, Telephone (613) 523-1770



Dr. Bruce Robinson

Mrs. Dorothy Robinson



Parliament Hill as seen from Hull, Québec, across the Ottawa River.

Dr. W.R. Thompson
Brig-Gen (Ret'd)

CDA PAST PRESIDENT APPOINTED DENTAL SERVICES COLONEL COMMANDANT

Dr. W.R. (Bill) Thompson, who served the Canadian Dental Association as President for 1982-83, was recently appointed as Colonel Commandant of the Canadian Forces Dental Services.

Dr. Thompson, who is a certified oral and maxillofacial surgeon, began his military career in 1943, serving during the Second World War as a dental assistant. Following the war, he graduated from the University of Toronto in 1949, with his DDS degree.

He has served as base dental office at Petawawa, St. Hubert, Gagetown and as senior dental officer in Marville, France. He has also been an instructor at the Canadian Forces Dental Service School at CFB Borden, Borden, Ontario.

His dental honours include his appointment as an honorary dental surgeon to the Queen in 1973. Dr. Thompson, who retired from the military in 1982 with the rank of Brigadier-General, is also a Fellow of the International College of Dentists, an Honorary Fellow of the Royal College of Dentists of Canada and has been presented with the Pierre Fouchard Medal by the National Order of Dental Surgeons of France for his contributions to international dentistry.

From the Federation Dentaire Internationale (FDI) Dr. Thompson has received a merit award. He is currently on the Executive Council of the FDI.

The position of Colonel Commandant is an honorary appointment which is accorded to a retired senior officer in a branch of the Canadian Forces. Dr. Thompson's duties will include fostering esprit de corps throughout the Dental Service Branch and advising the Chief of the Defence Staff on matters of significance to the Canadian Forces Dental Services. His appointment expires in 1988.

CANADA COUNCIL RESEARCH AWARDS AVAILABLE FOR SCHOLARS

The deadline for submissions to the Canada Council for both the Canada Council Killam Research Fellowships and for nominations for the three Canada Council Killam Prizes is May 30, 1985.

Killam Research Fellowships

The Killam Research Fellowships, named after Mrs. Dorothy J. Killam, and made possible by her bequest, are intended to support "senior scholars of exceptional ability engaged in research projects of outstanding merit in the humanities, social sciences, natural sciences, medicine and engineering and interdisciplinary studies within these fields."

An application form must be submitted to the Canada Council by May 30, 1985 and are available from any Canadian university registrar's office or by writing the Canada Council, P.O. Box 1047, Ottawa, Ont. K1P 5V8. The fellowships will be awarded for 1986.

Izaak Walton Killam Memorial Prizes

There are three memorial prizes, worth $50,000 each. These awards are intended to honour Canadian scholars actively engaged in research, whether in industry, government agencies or universities. The awards are not related to a particular accomplishment, but are given in recognition of distinguished lifetime achievement and an outstanding contribution to the advancement of knowledge in any discipline in the natural sciences, health sciences and engineering.

Scholars cannot apply for the Killam Memorial Prizes, but must be nominated by three specialists in their field. Deadline for nominations is also May 30, 1985, for awards to be given in 1986. Nominators are requested to provide the Killam Program with a brief description of the nature of the nominee's overall contributions to a particular field, current focus of the nominee's research interest, a copy of the nominee's curriculum vitae, a list of publications and a list of ten referees who will provide reference letters at the request of the Killam Program.

For further information or application forms, contact:

Mel MacLeod,
Head, Killam Program,
The Canada Council
P.O. Box 1047
Ottawa, Ontario
K1P 5V8.

PRESIDENT'S COLUMN

by Dr. Ralph Crawford

THE SACRED TRUST

The month of May traditionally is the month of graduation. Approximately five hundred young men and women from our 10 Canadian dental colleges will convocate at graduation ceremonies and take their rightful, well-earned place, in society. It is a privileged role – only .05 per cent, 13,000 people – can rightfully call themselves "dentists" in all of Canada. This privileged role is but a portion of a series of Trusts – a Trust that began long before their dream of dental graduation – and a Trust that remains within them all their years as a professional.

The Canadian Dental Association, working intimately with the educators in our dental colleges, is a major shareholder in the Trust. Since 1950, when the CDA Council on Dental Education appointed a survey committee to examine and report on the then five colleges in Canada, the Association has provided an accreditation process. Such a process, (as defined by Woods in 1976), is "designed to maintain predetermined national standards and to ensure uniform, probably portable, qualifications for graduates."

Today, the Council on Education and Accreditation, and its sister Council on Hospital and Institutional Services, continues that constant process of Trust. These Councils accredit all undergraduate, graduate and post-graduate programs; dental hygiene and dental assisting courses; dental internship and residence, and hospital institutional services. The system is secure. It is complex and strenuous, but certainly not static. It is an evolving process.

A major step was taken in 1984 with the establishment of a Joint Advisory Committee to provide the necessary "link-ups" between the two councils, in order that similar concerns and causes were properly addressed. Recently, at the 1985 Interim Board of Governors meeting, another "first" was attained. The Board approved the appointment of a lay representative – a consumer representative – to the 17-member Council on Education and Accreditation.

The Trust too, is ever so intricately entwined with the law-makers of the nation. Our legislators have the Trust that the rights – the health and well-being of the citizens of Canada – are protected. These law-makers in turn, grant to provincial licensing authorities, by means of Dental Acts, the mechanisms whereby practising dentists provide professional care "within the bounds of the law."

It is to be hoped that the law-makers, in upholding their Trust, will never cease to seek the advice and the opinion of the dental profession. Arbitrary decisions of political expediency *never* further the cause of any Trust.

The Trust must continue into the dental office. The dentist, a professional, is the extension of generations of dedication and knowledge. The professional obligation never ends at the convocation. The dentist, on graduation, or the dentist of senior years, must forever be the student. No dentist should have to be coaxed out to continuing education meetings, nor should he have to be exhorted to participate in association affairs. The dentist is entrusted with the obligation of enhancement – the enhancement of that which our dental forefathers passed down.

Finally, the public, whom we serve, also have a Trust. Every human being, in their growth and development, has been given at the outset, a dentition, that in the plan of the Creator, should last a lifetime. Our patients, and that 47 per cent of Canadians who are *not* regular patients, have a responsibility too – a Trust – to do all that is possible and practical to maintain oral health.

Thus, the task is all-encompassing, from educator to student, to dentist, to association, to legislator, to patient. It is a Trust – a sacred Trust. It is Dental Health – Good for Life.

"It is not fit that the public Trusts should be lodged in the hands of any, till they are first proved and found fit for the business they are to be entrusted with." Matthew Henry (1662-1714).

10 KM CDHA DENTAL FUN RUN

Sunday, September 29, 1985
9:00 A.M.
ARBORETUM
CENTRAL EXPERIMENTAL FARM
OTTAWA

Entry Deadline Date: September 6, 1985
Entry Fee – $8.00 (per person)

NAME _____

ADDRESS _____

T-Shirt Size

Men's			Ladies'		
☐ S	☐ M	☐ L	☐ S	☐ M	☐ L

Please make cheque payable to: **The Canadian Dental Association** and mail along with completed registration form to:

Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

1985
CDA National Convention
Registration Form

Name: Miss/Mrs. Dr./Mr. _____
(Please print for name tag)

Address: _____

City _____ Province _____ Postal Code _____

Telephone No.: _____

Name of spouse, if registered: _____

CDA Pre-Convention Participation Courses (Sunday, September 29)
Limited attendance courses—please indicate choices in order of priority
Open to registered CDA Convention delegates only
Registration required *no later than August 1, 1985*

☐ Custom staining of resin restorations	$250.00	☐ Computerization	$150.00
☐ Custom staining, porcelain crowns	$150.00	☐ Clinical photography	$150.00
☐ Emergency office procedures	$150.00	☐ Quality Control in X-Rays	$150.00
☐ Hydro colloid techniques	$150.00	☐ CPR Course	$ 50.00
☐ Basic Endodontics	$150.00		

$ _____

Convention Registration (September 29–October 2, 1985)

(Please complete appropriate category)

Dentist

General Practitioner
Specialist _____ (Specialty Group)

	to Aug. 1	after Aug. 1	
CDA Member/foreign dentist	$210.00	$250.00	
Non-member	$260.00	$300.00	$ _____

Includes access to scientific sessions & exhibits, three lunches, Sunday registration party and Tuesday Bytown Bash.

Spouse

Dental spouse $110.00 $ _____

Includes access to scientific sessions and exhibits, Sunday registration party, Monday fashion show and lunch, Tuesday tour and Bytown Bash, Wednesday lunch. Indicate tour preference ☐ House & Garden Tour or ☐ Lanark County Tour.

Wake-up Workout – will participate ☐ Yes ☐ No

Hygiene spouse $ 50.00 $ _____

Includes access to scientific sessions and exhibits, sponsored Sunday river cruise (pre-registrants – limited attendance), Registration party/Monday lunch and CDHA Monte Carlo Dance – The Las Vegas Swing.

Hygienist

Full Registration	**to Aug. 1**	**after Aug. 1**	
CDHA Member	$110.00	$120.00	
Non-member	$220.00	$240.00	$ _____

Includes access to scientific sessions, and exhibits, sponsored Sunday river cruise (pre-registrants—limited attendance), Registration Party, Monday lunch and Monte Carlo Dance, Tuesday lunch and Bytown Bash, Wednesday brunch.

Daily Registration			
CDHA Member	$ 50.00	$ 60.00	
Non-member	$100.00	$120.00	$ _____

Day(s) attending _____

Includes that day's scientific sessions, exhibits and luncheon or brunch.

Assistant/Office Personnel

Full Registration			
CDAA Member	$100.00	$110.00	
Non-member	$130.00	$140.00	$ _____

Includes access to scientific sessions & exhibits, Sunday city tour, Registration party, Monday lunch and Casino Night, Tuesday Bytown Bash, Wednesday Breakfast and tour.

Daily Registration		
CDAA Member	$ 50.00	
Non-member	$ 60.00	$ _____

Day(s) attending _____

Includes that day's scientific sessions, exhibits and luncheon or breakfast.

Student

Dental – complimentary
Hygiene – complimentary

Assistant –	$ 10.00	$ _____

Day(s) attending _____

Includes scientific sessions and exhibits only.

Technician

$ 50.00 $ _____

Includes scientific sessions and exhibits only.

Other

$ 75.00 $ _____

Includes scientific sessions and exhibits only.

Additional Social Tickets

Sunday Registration Party	$20.00 pp	$ _____
Monday President's Gala*	$45.00 pp	$ _____
Monday CDHA Monte Carlo Dance – The Las Vegas Swing	$10.00 pp	$ _____
Tuesday Bytown Bash	$40.00 pp	$ _____

*(not included in Registration package)

Total Amount of Enclosed Cheque $ _____

Make cheque payable to the **Canadian Dental Association** and mail to:
1985 CDA Convention
1815 Alta Vista Drive, Ottawa, Ontario. K1G 3Y6

Cancellation Policy: Cancellations are accepted in writing before September 1, 1985 for a full refund. Requests received after that date are subject to a 25% administrative charge.

*Please duplicate and complete this form if more than one registration is required.

HOTEL RESERVATION FORM

Name _____
(Please print or type)

Address _____

_____
City Province Postal Code

Telephone No. (Res.) _____ (Bus.) _____

Please Check Appropriate Designation

☐ Dentist
☐ Specialist _____
(Please list specialty group)
☐ Hygienist
☐ Assistant/Office Personnel
☐ Exhibitor
☐ Technician
☐ Student
Other (please specify) _____

Type of Room

☐ Single ☐ Double ☐ Twin ☐ Triple ☐ Other _____

Indicate first three hotel choices (Rates indicated single/double)

☐ Westin (CDA & CDAA Headquarters Hotel) ($89/$95)
☐ Chateau Laurier (CDHA Headquarters Hotel) $85/$95)
☐ Four Seasons ($85)
☐ Skyline ($80/$90)
☐ Holiday Inn, Ottawa Centre ($80/$90)
☐ Holiday Inn, Market Square ($50/$55)
☐ Delta ($80/$90)
☐ Roxborough ($57/$62)
☐ Lord Elgin ($50/$55)
☐ Plaza de la Chaudière ($90/$105)

Arrival Date_____ Time _____ Departure Date _____
Name(s) other occupant(s), if applicable _____

Please Note: A $75.00 deposit fee is required, payable to the **Housing Bureau, CDA Convention**

Please send deposit and hotel reservation form to:
The 1985 Ottawa Convention
c/o Ms Margot Rayburn
Canada's Capital Visitors and Convention Bureau
222 Queen Street, 7th Floor
Ottawa, Ontario. K1P 5V9
Deadline for reservations: August 28, 1985

Briefly

The Prince Edward Island Dental Assistants' Association provides a service to its members which may prove of interest to the profession.

The Association offers a job placement service to assistants seeking employment and to dentists requiring staff on a part-time, temporary, or permanent basis.

For information or to take advantage of the service, contact: Heather Walker, Job Placement Officer, PEI Dental Assistants' Association, P.O. Box 1845, Charlottetown PEI, C1A 7N5.

The Université de Montréal recently announced the winners of the 1984 Aldus Bernard and Joseph Nolin prizes.

Drs. Anne-Marie Brissette and Serge Baril will be sharing the Aldus Bernard Prize, while Dr. Pierre Perron will receive the Joseph Nolin Prize.

Both prizes are for those students of dentistry who obtained the highest and second highest average over four years of study at the Université de Montréal.

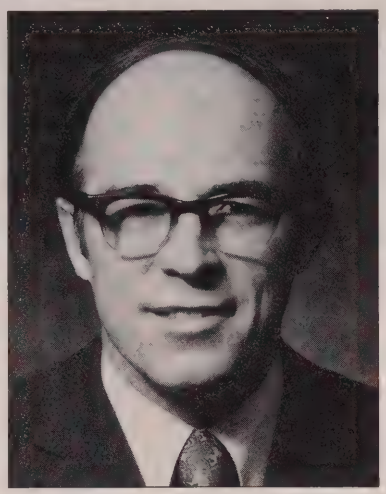
The Canadian Dental Association recently formed a Committee on Salaried Dentists to address the concerns of those CDA members who fall into that practice category.

Chairman of the Committee is Brigadier General J.N. Wright, of Ottawa. Members are Dr. H.L. Goldberg, President of the Association of Government Salaried Dentists of Saskatchewan, Dr. R.K. Ryan, from Resource Services, Public Health Branch, Ministry of Health, Toronto, Dr. A. Schwartz, Dean of the University of Manitoba in Winnipeg, Dr. R.A. Turcotte, Saint John, New Brunswick and Dr. Charles Tessier of Sherbrooke, Quebec.

The Canadian Dental Association has increased its donation to the Canadian Fund for Dental Education to $10,000 per year, beginning in 1985.

The decision to increase the donation was made at a recent Executive Council meeting of the Association and passed at the Interim Board of Governors meeting in Ottawa, March 8-9, 1985.

Dr. David K. Peters, Chairman of CFDE, commended the Association for its increased support of the Fund, and expressed his appreciation to the Board for endorsing the resolution.



Dr. David K. Peters

The Canadian Dental Association recently honoured some longstanding contributors to its political and administrative life.

Drs. I.C. Bennett, who served on the Council on Education, Dr. J.M. Gourley, who served on the Council of Dental Materials and Devices; Dr. M.J.R. Leitch, a longtime member of the Board of Governors; Dr. A.E. MacLeod, for six years, Chairman of the Editorial Board and Dr. M. Gornitsky, formerly Chairman of the Council on Hospital Services, all received Certificates of Merit.

The President, Dr. Ralph Crawford has sent out letters of appreciation to eight more members of various Councils and Committees for their work in their respective areas. Dr. E. Busvek, who served on both the Board of Governors and the Council on Education; Dr. G. Anthony, from the Council on Constitution and By-Laws; Dr. R.J. Bell, from the Board of Governors; Dr. R.C. McClelland, of the Council on Ethics; Dr. T.E. Ramage, longtime member of Executive Council, Dr. F. Reid, from the Council on Nominations; Dr. D.L. Thompson, another longtime member of Executive Council and Dr. A. Thivierge, who served on Council on Student Affairs, all received a letter of appreciation.

The annual World Health Organization (WHO) competition for fellowships is now open.

The fellowships are available to Canadian citizens who wish to study for short periods abroad. All health personnel in medical, paramedical and health related fields including dental practitioners and dental auxiliaries are eligible to apply. Those engaged in pure research, however, are not eligible.

Applications must be submitted before August 31, 1985. Information and application forms can be obtained by writing: WHO Fellowships, Intergovernmental and International Affairs Branch, Department of National Health and Welfare, Jeanne Mance Building, Tunney's Pasture, Ottawa, Ont., K1A 0K9.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on March 31, 1985.

Common Stock Fund	$89.74604
Fixed Income Fund	$43.68803
Money Market Fund	$31.23336
Balanced Fund	$17.62752

Total assets (market value) of the plan were $43,819,855.

The previous month's figures, as of February 28, 1985, stood as follows:

Common Stock Fund	$88.57262
Fixed Income Fund	$43.07262
Money Market Fund	$30.93608
Balanced Fund	$17.36490

Total assets (market value) of the plan were $42,531,812.

For further information write to: Canadian Dental Service Plans Inc., Ste. 600, 2 Lansing Square, Willowdale, Ontario M2J 4Z3 or call the central information services of CDSPI at 1-800-268-5418 (toll free number for Western Canada, Atlantic Canada and Ontario for Code 807 only, 1-800-268-3411 (toll free number for Quebec and Ontario except Code 807), and 497-7117 (Metro Toronto area).

Relieve Finger Fatigue

Lighten up with *Light Touch*™

premier *Light Touch* hollow handled scalers and curettes can lighten up your task of scaling and root planing. The Light Touch round handle is slightly larger in diameter (5/16"), yet actually lighter in weight than ordinary instruments. So you get not only a good firm grasp that's never cramped, but also relief from finger fatigue and tension during those difficult scalings.

With a Light Touch scaler or curette, your strokes can be more efficient; the shanks are swedged into the hollow handle to give you greater tactile sensitivity than ordinary solid instruments. And that sensitivity allows you to detect even the slightest tooth surface irregularities and calculus deposits.

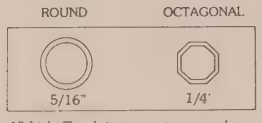
Now Even *Lighter*

Light Touch octagonal hollow handle of standard 1/4" diameter, weighs even less.

All popular tips are available on the original round and the new octagonal handle. So lighten up with Light Touch.

premier

PREMIER Dental Products Co., Box 111, Norristown, PA 19404
PREMIER Dental (Canada) Inc., Scarborough, Ont., M1W 3K5
Available through your dealer



All Light Touch instruments are made entirely of surgical stainless steel. They will never corrode, even after repeated sterilizations.

Resource Centre de documentation

CHILD ABUSE AND THE DENTIST

LES ENFANTS MALTRAITÉS ET LE DENTISTE

1. Badger, G.R. *Dental neglect: a solution*. ASDC Journal of Dentistry for Children, v. 49, no. 4, July/August, 1982, pp. 285-287.

2. Becker, D.B., Needleman, H.L. and Kotelchuck, M. *Child abuse and dentistry: orofacial trauma and its recognition by dentists*. Journal of the American Dental Association, v. 97, no. 1, July 1978, pp. 24-28.

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Abstract:
The case of a Vietnamese child who was subjected to the folk medicine practice of cao gio by his father after a routine dental extraction is described. The practice and the clinical appearance are discussed to distinguish it from child abuse.

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One copy of the above articles is available at no charge from the library to all CDA members: Non-members will be charged $5. This bibliography was generated with the help of MEDLARS, a computerized information retrieval system for the Health Sciences field, which has been operational in the library since February 1982, and is at the disposal of all members.

La bibliothèque de l'ADC offre gratuitement à ses membres et pour $5 aux non membres une copie des articles au-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS, un système informatisé de recherches bibliographiques pour les sciences de la santé. Ajouté à la bibliothèque en février 1982, ce système est à la disposition de tous les membres.

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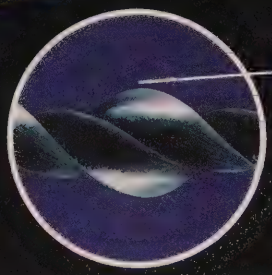

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Book Reviews

CREVICULAR FLUID UPDATED

Cimasoni, G. (Geneva)

V111 + 152P., 5 tab., hard cover, 1983:
ISBN 3-8055-3705-0
Karger, Basel, Switzerland
$69.50 U.S.

The amount and composition of gingival fluid have been investigated in clinical situations known to affect the periodontal structures. The origin, the composition and the clinical significance of gingival fluid are now known with more precision and have significantly helped our understanding of the pathogenesis of periodontal disease.

The Crevicular Fluid, released in 1974 has been a standard reference to knowledge on gingival fluid. In Crevicular Fluid Updated, Giorgio Cimasoni has provided a most readable monograph on a complex subject. There is a full review of the knowledge on the composition, physiology, and clinical significance of gingival fluid in health and disease. All dental students and particularly the post-graduate student in Periodontology will be impressed with the material on Gingival Sulcus-Gingival Pocket-Periodontal Pocket as well as the review of Gingival Vasculature and Crevicular Fluid including permeability of junctional and oral sulcular epithelia. The clinical significance of all findings is well documented. Although all clinicians would be interested in having this monograph as a reference book the basic scientist in this field will appreciate the well organized and complete view of new advances in this field. The scientist would be particularly pleased with the sections on Recent Concepts on the Mechanism of Gingival Fluid Production; Methods of Collection; Composition.

No criticism of this excellent Monograph can be offered. The book is very well organized and flows beautifully from start to finish. Chapter titles include: The Gingival Sulcus; Gingival Vasculature and Crevicular Fluid; Recent Concepts on the Mechanism of Gingival Fluid Production; Methods of Collection; Composition; Clinical Significance; Summary and Conclusions. It is a credit to the author that such a voluminous amount of material could have been presented so well in such a compact publication.

This book was reviewed by
Claude G. Ibbott, DMD
A periodontist in private practice in Regina, Sask.

THE SCIENCE AND ART OF DENTAL CERAMICS VOLUME II: BRIDGE DESIGN AND LABORATORY PROCEDURES IN DENTAL CERAMICS

John W. McLean

Quintessence Publishing Company Inc., 512 pages, $140.

This excellent text is the companion to Volume One reviewed by Professor Derek Jones (J. Canad. Dent. Assn, 657-658, 1982). The intention of Volume II is described accurately and succinctly by its title, and, in this it succeeds admirably. It will appeal to these dentists and technicians who wish to produce cosmetic dentistry.

The book provides complete step by step instructions and illustrations to guide the reader in the construction of porcelain crowns. The complexity proceeds from the single crown to the procedures required for complete mouth rehabilitation. Each phase, is accompanied by the scientific rationale to support the techniques where possible blended with the author's observations as to what has been most successful over 20 years of evolution.

The text consists of 512 pages organized into ten chapters. The style is easy to read with clear language and syntax. The S1 measurement and the Harvard reference systems are used, and a list of references is provided after each chapter for the more interested reader to pursue.

The illustration of the text is superb! The number and consistent quality of colour photographs and diagrams is a credit to author and publisher and adds immensely to the value of the book.

The wealth of information and explanation of ceramics presented in this book will be of interest mainly to technicians building porcelain restorations; whereas the fundamentals of bridge design and technical information provided will assist dentists to plan their tooth preparation and critically evaluate the technical results with which they are provided.

This book will be an ideal Christmas gift for any dentist who wants the best in ceramics. Give it to your favorite laboratory and enjoy the benefits in the years to come.

This book was reviewed by
Aaron Fenton, Associate Professor of Prosthodontics at the University of Toronto.

CLINICAL TRANSPLANTATION IN DENTAL SPECIALTIES

Edited by Peter J. Robinson and Louis H. Guernsey

299 Pages, 493 Illustrations
The C.V. Mosby Co.

Tremendous progress has been made in therapeutic transplantation in the last 25 years or so within the health professions generally, and dentistry has been no exception in its research and employment of transplantation techniques within the oral cavity. Now for the first time we have a well laid out definitive textbook dealing specifically with the possibilities and problems of transplantation of tissues within the oral cavity.

The book is laid out in four major areas. Chapters I through IV deal with concepts that apply generally to all the tissues transplanted in the oral region. The first chapter deals with the immunopathobiology of transplantation with sections discussing transplantation immunology, tissue typing and immunogenetics, and experience generally with clinical transplantation. At the end of this, and indeed other chapters, is a very useful glossary of terms which is most helpful to those readers for whom much of this kind of information may be relatively new and complex.

Chapter II deals with the special transplantation problems within the oral cavity. These include the problems of grafts functioning in a non-viable state, the acellular transplant, coping with the oral bacterial flora, and constant functional stress.

The third chapter goes on to discuss the biology of bone.

The final chapter in this first section deals with tissue banking and the use of banked tissues in dentistry and includes the basic outlines and rules for the operation of a tissue bank. A minor criticism in this chapter is the appearance of a post-operative clinical photograph of an allogenic rib graft to the mandible, but no pre-operative clinical photograph seems to be available for comparison, although pre- and post-operative radiographs are shown for the same case.

The next five chapters of the book which comprise the second major area of discussion deal with the use of tissues in specific disciplines. There are three chapters devoted to teeth (intentional re-plantation of teeth, tooth transplantation, and the management of avulsed teeth.) All three chapters are well-furnished with information on assessment, "how to" descriptions of techniques, and post-operative management and post-operative complications. There are two chapters of more specific interest to the periodontist dealing with soft tissue grafts in periodontics and bone replacement procedures in periodontics. These chapters deal with the indications for gingival grafting, the functional, histologic, and genetic determinants governing clinical procedures, and contain excellent step-by-step descriptions of techniques for performing single pedical and double pedical lateral gingival grafts, and free gingival grafts.

The final major section of the book contains four chapters of principal interest to the oral and maxillofacial surgeon.

The first chapter deals with soft tissue grafts and describes the use of both skin and oral mucous membrane and its application in the mouth for pre-prosthetic surgical procedures. Good attention is paid again to description of clinical techniques and includes pre-operative assessment, post-operative management, and description of post-operative complications. The next chapter deals with conventional bone grafts in oral and maxillofacial surgery and deals with the use of bone for reconstruction of traumatized mandibles, ridge augmentation procedures, and the ensuing possible post-operative complications of autogenous bone grafting. There then follows a chapter on special bone grafts in oral and maxillofacial surgery which deals with special situations such as reconstruction of the mandible following oncologic surgery, bone grafting procedures for the irradiated patient, and secondary grafting procedures in the restoration of residual clefts of the alveolar ridge.

The final chapter in this book addresses the subject of allo-plastic grafts in oral and maxillofacial surgery and describes the different classes of implant materials such as metals, medical polymers, ceramics, and composites.

In summary, this very welcome text offers an in-depth insight into the current state of the art with respect to clinical transplantation of both hard and soft tissues within the oral cavity. The book should be invaluable in particular to the periodontist and to the oral and maxillofacial surgeon and to some extent to the pedodontist and endodontist and to the general practitioner, particularly with respect to the description of tooth re-implantation, the management of avulsed teeth and tooth transplantation. If of no other specific use to the general dental practitioner however, this book does certainly deserve attention from the general dentist as well as the specialist since it gives an excellent overview of what indeed can be achieved today by the transplantation of both hard and soft tissues within the oral cavity.

This book was reviewed by
Dr. Colin F. Foster
Winnipeg, Manitoba.

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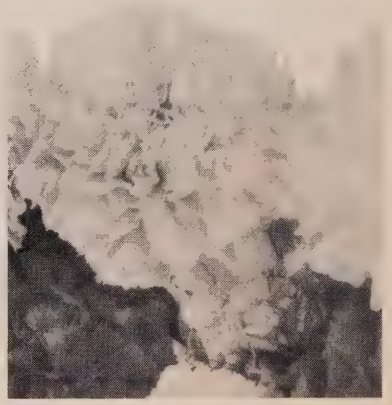

Letters

ACCEPTED ANTIBIOTIC PROPHYLAXIS REGIMEN HAS BEEN UPDATED

A recent report updating the accepted antibiotic prophylaxis regimen for prevention of bacterial endocarditis, has been published in the *Journal of the American Dental Association*, Volume 110, pages 98-100, January, 1985. The accepted regimen of the American Heart Association and the Council on Dental Therapeutics has been altered. This is vital and timely information that should be provided to readers of the Journal. I have therefore prepared the following.

NEW RECOMMENDED ANTIBIOTIC REGIMEN FOR BACTERIAL ENDOCARDITIS PROPHYLAXIS

Recent changes had been made in the antibiotic protocol for prevention of bacterial endocarditis. The recommendations of the American Heart Association as presented by the Council on Dental Therapeutics of the American Dental Association is a significant departure from past antibiotic protocols. Canadian dentists are influenced by the recommendations of these two association reports.

Cardiac conditions that require endocarditis prophylaxis include prosthetic cardiac valve replacements, most congenital cardiac malformations, surgically constructed systemic pulmonary shunts, rheumatic and other acquired valvular dysfunctions, ideopathic hypertrophic subaortic stenosis, and a previous history of bacterial endocarditis. Mitral valve prolapse with insufficiency may also require antibiotic prophylaxis. Endocarditis prophylaxis is not recommended for isolated atrioseptal defects, patent ductus arteriosus treated six months earlier and postoperative coronary artery bypass graft surgery. Patients with indwelling cardiac pacemakers appear to present a low risk of endocarditis. Renal dialysis patients with atriovenous shunt appliances and shunts for hydrocephalus appear to be at low risk, however, the practitioner may chose to use prophylactic antibiotics in these cases.

Patients at risk for bacterial endocarditis must maintain good oral health in order to reduce potential bacteremia. Any dental procedures that are likely to produce gingival bleeding place the patients at risk for bacteremia.

PROPHYLAXIS RECOMMENDATIONS: Standard Regimen

Oral Penicillin:
Adults and children (over 60 pounds): Penicillin V 2 gm. 1 hour before procedure and 1 gm. six hours later.

Children less than 60 pounds: 1 gm. 1 hour before procedure and 500 mg. 6 hours later.

In patients who are unable to take oral antibiotics, Penicillin G, 2,000,000 units IM or IV, 30-60 minutes before the procedure (50,000 units per kilogram for children) and 1,000,000 units 6 hours later (25,000 units per kilogram for children).

For patients at high risk of endocarditis (ie, prosthetic valves:

Parenteral Ampicillin and Gentamicin:
Ampicillin 1-2 gm. (50 mg. per kilogram for children) plus Gentamicin 1.5 mg. per kilogram (2.0 mg. per kilogram for children) IM or IV ½ hour before procedure; 1 gm. oral Penicillin V 6 hours later (500 mg. for children under 60 pounds).

For patients allergic to Penicillin:

Oral Erythromycin:
Erythromycin 1 gm. (20 mg. per kilogram for children) 1 hour before procedure and 500 mg. (10 mg. per kilogram for children) 6 hours later.

For patients unable to tolerate either Penicillin or Erythromycin

an oral cephalosporin (1 gm. 1 hour before and 500 mg. 6 hours later) may be substituted.

Regimen for high risk patients allergic to Penicillin:

IV Vancomycin: Vancomycin 1 gm. (20 mg. per kilogram for children) IV slowly over one hour beginning one hour before procedure. Repeat dose does not appear necessary due to the long half life of Vancomycin.

The changes in the recommendation for antibiotic regimens is based on the finding that bacteremia rarely persists longer than 15 minutes following the procedure.

It is encumbent upon all dental practitioners to be thoroughly aware and up to date regarding the accepted regimen for antibiotic prophylaxis of bacterial endocarditis. The report of the Council of Dental Therapeutics of the American Dental Association can be reviewed in the Journal of the American Dental Association, Volume 10, pages 98-100, January, 1985.

J.B. Epstein, DMD, MSD
Division of Dentistry
Cancer Control Agency
of
British Columbia

PROUD OF HONOUR CONFERRED BY CDA

It was with great pleasure that I received your letter in December, stating that the Canadian Dental Association had seen fit to grant me a Life Membership in our association and it was with much pride that I received by 1985 membership card early in February.

I have always been proud, not only with my association with the C.D.A., but also with the O.D.A. and my local society, and have endeavoured to contribute and do my part from time to time.

I deem it an honour to have been selected for Life Membership and would like to extend my appreciation and thanks to you and the Board of the C.D.A.

W.J. Downer, DDS
Kitchener, Ontario.

Editor: *The above was sent to the attention of Dr. P.R. Crawford, President of the CDA and Mr. Hubert Drouin, Executive Director.*

MISPLACED KANDY

Lest the power of the pen be outrageously abused by the distribution of erroneous communication, allow me to humbly submit the following correction to an article authored by the undersigned in the December 1984 publication of the Canadian Dental Association. In a moment of misguided irrationality, I stated that Kandy is a city in India. Hopefully, any further international incident can be averted by stating this city, is, in fact, situated in Sri Lanka. I regret any embarrassment that may have been created for the CDA, the Canadian Government, the United Nations, or my brother who defended me despite overwhelming evidence to the contrary.

J.H. Gryfe, DDS
Weston, Ontario

'MANY NOSTALGIC MOMENTS'

It was very kind and thoughtful of you to send me a souvenir copy of the January 1985 "50th Anniversary Issue" of the **JOURNAL of the CANADIAN DENTAL ASSOCIATION**. I congratulate you and your colleagues for preparing such a fine publication.

Perusing the section devoted to events of the past evoked a good many nostalgic memories. I was especially pleased with the tributes that you accorded Dr. Harry Garvin, with whom I was acquainted and whose wit and wisdom were much appreciated.

Though time has elapsed since I relinquished my editorial duties, I still look forward with keen anticipation to the arrival of each new issue. You and the members of your team deserve praise for upholding the fine traditions of our national *Journal*.

Dr. F.H. Compton
Toronto, Ont.

PLAUDITS FROM MANITOBA

During a meeting which President Dr. Crawford and I attended, I complimented him on the excellent Anniversary Edition of the Journal, which I had perused with great enthusiasm. I indicated to him that it was my intention to write you a letter, congratulating you on the excellent Anniversary Edition.

There was no delay in my getting down to this letter when I noticed, within the first few pages of your February issue, your most kind and generous article and pictures about Symposium 26. Thank you for giving us such tender loving care.

I know that you will keep up the good work with the Journal – best wishes for your continued success as Editor.

A. Schwartz, Dean
Faculty of Dentistry,
University of Manitoba

OBITUARIES/NÉCROLOGIES

DAVIS, M: A graduate of the University of Toronto in 1938, Dr. Davis was born in 1913. She was a Life Member of the Canadian Dental Association and resided in Kingston, Ontario at the time of her death.

EGAN, C.J.: Born in 1913, Dr. Eagan was a graduate of Dalhousie University in 1938. He was a Life Member of the Canadian Dental Association.

GIPTERS, V: A graduate of the University of Toronto in 1960, Dr. Gipters was a resident of London, Ontario, at the time of her death.

GRANAT, H.A.: A resident of Islington, Ontario at the time of his death, Dr. Granat was a graduate of the University of Toronto in 1956.

HUOT, R.: Né en 1920 et diplômé de l'Université de Montréal en 1946, le Dr Huot était membre permanent de l'Association dentaire canadienne.

KELLY, G.L.G.: A graduate of the University of Toronto in 1955, Dr. Kelly was a resident of Newmarket Ontario at the time of his death.

KOTSEFF, B.A.: Dr. Kotseff, a longtime practitioner in Toronto, died recently at the age of 71. A graduate of the University of Toronto in 1944, he served with the Canadian Forces Dental Corps in the Second World War.

LAFORTUNE, M.H.: Né en 1922 et diplômé de l'Université de Montréal en 1947, le Dr Lafortune habitait à Montréal au moment de son décès.

LATUS, M.G.: Born in 1939, Dr. Latus was a graduate of the University of Durham, in 1963. He was practicing in Nova Scotia at the time of his death.

LEBLANC, R.-M.: Né en 1904 et diplômé de l'Université de Bordeaux (France) en 1927, le Dr Leblanc habitait à St-Lambert (Québec) au moment de son décès. Il était membre honoraire de l'Association dentaire canadienne.

LEDUC, G.: Né en 1924 et diplômé de l'Université de Montréal en 1949, le Dr Leduc habitait à Montréal (Québec) au moment de son décès.

McMULLEN, J.C.: Dr. McMullen, a resident of Fredericton, New Brunswick at the time of his death, was born in 1906. He was a Life Member of the Canadian Dental Association and graduated from Dalhousie University in 1931.

MARSHALL, T.R.: Dr. Marshall graduated from the Royal College of Dental Surgeons, School of Dentistry in Toronto in 1921. He was a resident of Toronto, Ontario at the time of his death.

MORROW, G.M.: A Life Member of the Canadian Dental Association, Dr. Morrow was born in 1913. He graduated in 1941 from the University of Toronto.

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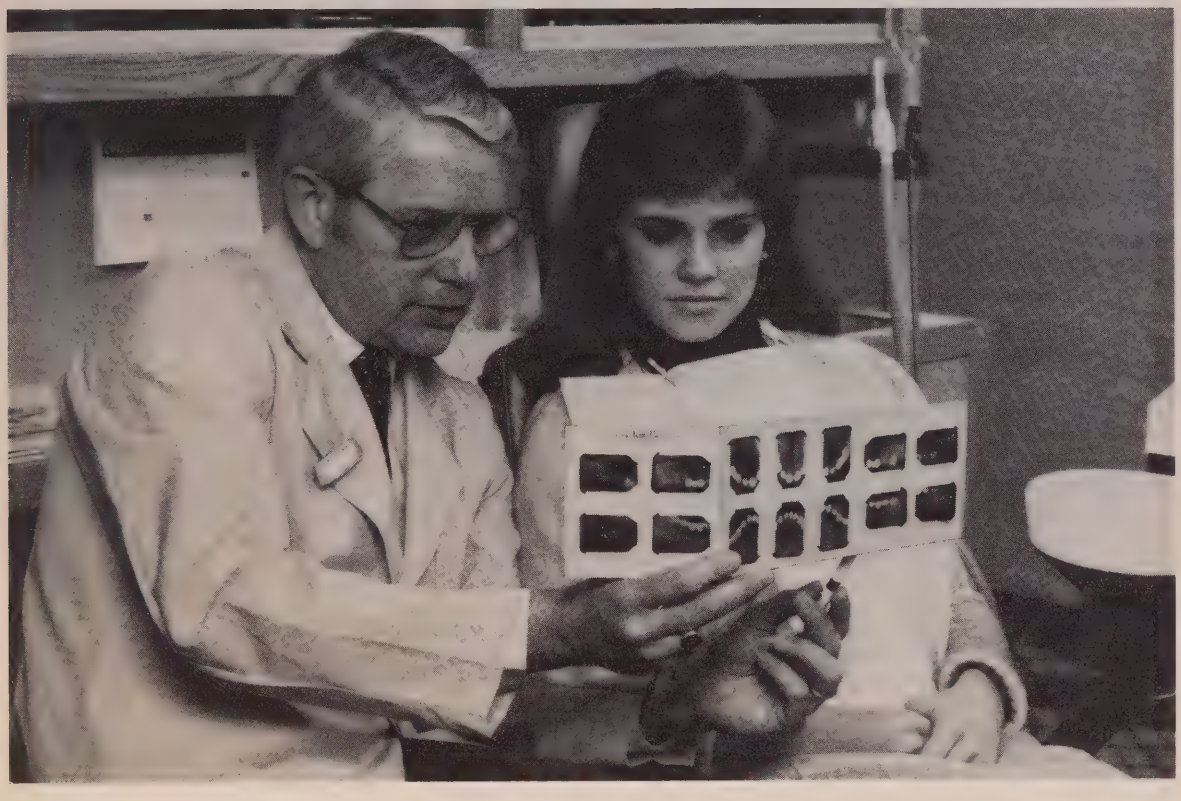

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COMPUTERS AND THE DENTIST

OPERATING SYSTEMS

Alan Veldman & Steven Yolleck

DISCUSSION

Over the past few months we have received many requests to discuss operating systems; this column will discuss just what an operating system is, and the different types of operating systems in use today. As a model for the examples we will be using the IBM PC operating system (called "DOS"), but the principles apply to most operating systems.

What is an operating system? First of all, it is a program, just like any other program that might be run on your computer. It is a "jack of all trades" program, comprising such diverse functions as controlling all of the devices (i.e. screens, printers, disks, etc.), providing the facilities to run your programs (and possibly other programs at the same time), and keeping track of the time of day.

One of the first big operating systems, introduced in the early 1960's, was called "DOS" (for Disk Operating System). It was developed by IBM for use on the IBM System/360 computer. This DOS only let you run two programs at once (the so called "foreground" and "background" programs), and you had to pre-set the amount of your main memory to be allocated to each program.

When the System/370 was announced, a new operating system was announced. Although you still had to tell the system how much memory was to be allocated to each program, you could run up to sixteen programs at the same time. Since the number of programs (or "tasks") that you could run was fixed (at sixteen), this new operating system was called OS/MFT (Operating System-Multiprocessing with a Fixed number of Tasks). The problem with OS/MFT (and "DOS" for that matter) was that you had to divide the memory of the computer up into fixed blocks (called "partitions") in advance. This led to wasting precious computer memory, because it was often necessary to run small jobs in large partitions.

IBM then announced OS/MVT (Multiprocessing with a Variable number of Tasks). This was a giant leap forward in operating system technology. This operating system checked to see how much memory a program required, allocated the memory to the program while it was running, and freed up the memory when the program was finished.

OS/MVT was the dominant operating system for many years until the giant new mainframes (like the 303X series or IBM compatibles such as the "Amdahl" series) came along in the late 1970's. These machines were larger and faster than the older/370 models, and new operating systems had to be developed. IBM came up with two new operating systems that used a technique called "virtual storage" (VS). The first version of virtual storage, VS1, was very similar to OS/MVT, but it allowed the system to "pretend" that it had more main memory than it really did. It did this by using the computer's disk storage in addition to the main memory itself. Even this, however, was not enough to exploit the real power of the new machines, so VS2 was announced. Under VS2 each program pretends that it is the only program in the computer at that time, and can use all of the "memory" in the computer it wants to. (In reality, though, the operating system breaks the program up into chunks small enough to fit into the real memory and loads the program in pieces). VS2 is also called MVS (for Multiple Virtual Storage), and is the dominant operating system for large mainframes today.

The very latest in operating systems is MVS/XA (extended Architecture), which allows computer users with large memory requirements to get around the limits imposed by the System/370.

As far as micro computers go, there are basically three major operating systems: CP/M, DOS, and UNIX. CP/M (the Control Program for Microcomputers), the first really popular microcomputer operating system, is used on the Apple computer. "DOS" (No relation to the "DOS" used on the System/360) is used on the IBM Personal Computer and PC lookalikes. It is also known as PC DOS (Personal Computer DOS) or MS DOS (after its author MicroSoft Corp.).

The most powerful of all micro computer operating systems is UNIX, which was developed about ten years ago by Bell Laboratories in the U.S. It allows more than one program to run at the same time on a system, whereas the PC DOS doesn't. UNIX has been popular among programmers for many years, but it is just catching on for general use. UNIX is available for the PC right now from independent software houses, but IBM will probably be introducing a version of UNIX for the PC sometime this year.

Which operating system should you choose? If you are thinking about an Apple Computer then you have no choice – you go with CP/M. The Mackintosh and LISA computers use their own operating systems, so you have no choice there either. On the PC you can run PC DOS, CP/M, or UNIX. The vast majority of all PC's sold are sold with PC DOS. (We believe the figure is 90 percent). Almost all programs sold for the PC require that you have PC DOS. The only time you would run CP/M on the PC is if you have an extensive library of CP/M programs on your Apple that you want to run on your PC. (Note: you will probably need an "Apple emulation board" on your PC if you want the programs to run without modification).

If you are thinking of a multi-terminal PC, then you will probably want to run UNIX. At the present time, however, there are not too many UNIX-based programs on the market, and the IBM version has not yet been introduced. Therefore, our best advice to you is to wait until IBM announces its multi-terminal operating system some time this year.

By the way, if there is any topic you would like us to write about, please feel free to write us care of:

Canadian Dental Association Journal
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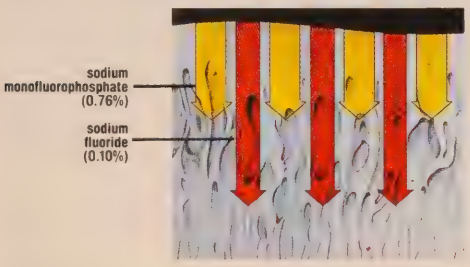
How Colgate's two fluoride formula achieves more complete remineralization resulting in nearly double the cavity protection of a single fluoride formula*.

A major role of fluoride in cavity prevention is to accelerate the process by which demineralized enamel is rebuilt.[1-4] This reverses white spot lesions which would otherwise become cavities.

Today's Colgate is the first toothpaste with two fluorides—sodium monofluorophosphate at 0.76% and sodium fluoride at 0.10%. Their differing molecular structures mean that these fluorides may work in different ways in tooth enamel. The result at these concentrations, is more complete remineralization of white spot lesions than either can achieve alone.

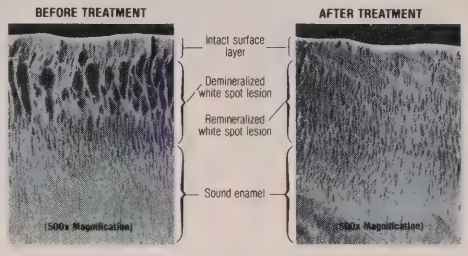
Why these two fluorides remineralize more completely.

It has been postulated that fluorides reach white spot lesions by penetrating enamel through the interprismatic spaces. Sodium monofluorophosphate, being a larger molecule, reacts with enamel primarily at the surface of a white spot lesion. Sodium fluoride, a smaller molecule, penetrates deeper into the lesion.



Working at different levels, the two fluorides may complement each other, enhancing remineralization over a greater area of the lesion than a single fluoride* alone.

This complementary action means more fluoride is available to enhance remineralization over a greater depth of the lesion than is provided by either fluoride alone.[5,6]



This more complete remineralization has been demonstrated in laboratory studies,[7] and can be seen in the photomicrographs above.

Clinical studies show nearly double the cavity reduction.

Colgate with this two fluoride concept was tested in a three year clinical study.[8] The results—Colgate's two fluoride formula provided 27.0% reduction in new caries versus 13.8% for the single fluoride positive control* (DMFT).

Conclusion.

Colgate's two fluoride formula provides superior cavity protection to a single fluoride formula*: *Only Today's Colgate has a two fluoride formula.*

When you recommend Colgate you're recommending an innovative product—offering advanced and clinically tested cavity protection.

*Sodium monofluorophosphate (0.76%)

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CANADIAN DENTAL ASSOCIATION RECOGNITION

† Colgate Toothpaste contains sodium monofluorophosphate and sodium fluoride which are, in our opinion, effective decay preventive agents and are of significant value when used in a conscientiously applied program of oral hygiene and regular professional care. Canadian Dental Association

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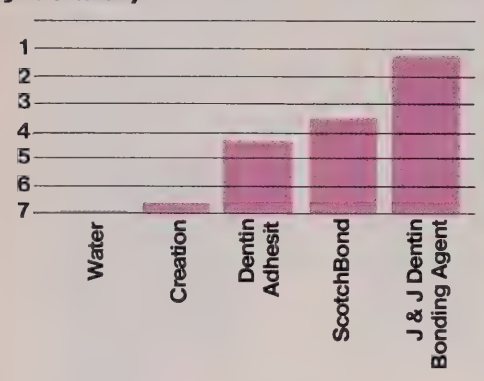
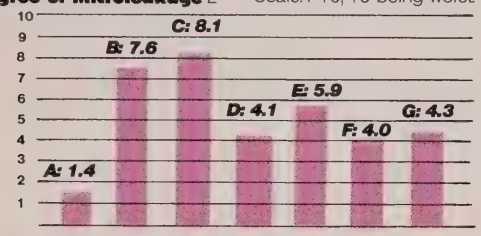
Degree of Acidity[1]

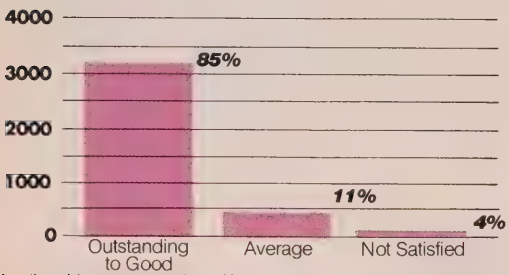


Degree of Microleakage 2 Scale:1-10, 10 being worst.



Code	Bonding Agent
A	Creation Bonding Agent-Visar Seal
B	Concise Bond
C	Dentin Adhesit
D	Super Bond w/ Silux
E	Durafil Bond
F	Scotch Bond
G	Super Bond w/ Durafil

Satisfied User Survey



A nationwide survey was taken of 9,800 dentists who use Creation Bond. The survey received a 40% response. 85% of those who responded rated Creation Bond outstanding to good, 11% rated it average, and only 4% were not satisfied.

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1. Tests conducted on an Orion Model 701A Digital pH Meter.

2. North Carolina Dental Gazette, May/June 1984
Duane F. Tayler, Robert N. Konishi, Karl F. Leinfelder

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1-069

HOLIDAYS AND LEISURE TIME

DO YOU KNOW HOW TO MAKE THE MOST OF THEM?

Lanalee Cleveland Schmidt, PhD, Psychologist
E.J. Neidhardt, BSc, MD, CCFP
Vancouver, B.C.

RESUMÉ

The stress of dentistry is reviewed within the context of managing a practice effectively. The importance of scheduling holidays and leisure time, which provides one of the most satisfying methods of coping creatively, is emphasized, with practical guidelines provided for incorporating this aspect of a dental practice.

INTRODUCTION

"I know I should take a vacation more often, but somehow I can't seem to find the time. Anyway, when I do take a couple of weeks off I worry all the time about my overhead back at the office. Then I have to get back to work and that's almost worse than never leaving."[7]

This quote certainly illustrates a not uncommon situation, although holidays and leisure time should be one of the most satisfying and rewarding ways of managing the stress of dentistry.

A dentist functions in his/her work as a highly trained professional working in a very confined area; runs a high-volume business with a low margin of profit; manages and trains staff; acts to support patients and staff; and keeps up-to-date reading and attending lectures and seminars. A dentist also functions within the context of his/her family within the community. These demands create multiple and varied challenges and stresses.

The physical constraints of working within a confined area, in a relatively fixed posture, creates a high incidence of back and musculoskeletal problems.[2]

These problems, in turn, may lead to a lack of exercise, which results in assorted problems. Confinement is not limited to the physical situation, as the office practice makes it difficult to receive collegial support of other dentists, and mental stimulation may be narrowed significantly.[12] This isolation is furthered by treating difficult patients.

Dental patients can be difficult to cope with emotionally as they have a high incidence of dental anxiety,[4] and dental phobias. Most patients do not see dentistry as an experience to be cherished and enjoyed. Dealing with the pain of patients is a part of the dentist's daily routine, requiring the dentist to distance himself and objectify his work on an ongoing basis. This can lead to emotional blunting; adding to the physical and intellectual restriction.

Another major area of pressure is that of economic responsibility. Most dentists enter their profession with a debt incurred from school loans, and experience low income during the rather lengthy training period. For those dentists starting up a practice there is a huge economic burden, often compounded by developing families and requirements for an auto and a home. Dentists compensate by working steadily, often to the point of not taking adequate time off, even during an illness, let alone taking appropriate holiday time and providing for leisure activities. Dentists who obtain the highest earning levels pay the price through more difficult work schedules, longer work days, more evening work and *higher stress symptoms scores*.[6]

Another area of stress revolves round the dentist's work and his/her family. The family often provides support and is a source of satisfaction, conversely producing the demand inherent in responsibilities of child care, financial support and the expectational lifestyle of a professional person. For women, this pressure may be even more substantial, in that traditionally there is more pressure for them, in addition to the typical professional demands, to function fully in the home. In considering leisure time and holidays, again, the expectations are that there will be adequate financial resources for such endeavours. However, this often is not the case, and the time pressures in a dentistry practice make it difficult to organize and plan leisure activities effectively.

Along with these external pressures there are many internal psychological variables, which have their effect on individual dentists.

The Type A personality as defined by Friedman and Rosenman[3] is a behavioral characteristic of many. They have more time pressures and have difficulty in dealing with the problems of scheduling patients, and missed appointments. This often results in the dentist being labelled "a workaholic" who pressures himself or herself and staff to work longer and longer hours.

These causes of stress make it imperative that dentists consider their situation and take active steps to manage it effectively. This subject has been addressed by a number of articles regarding stress, including an excellent book on stress management co-authored by a dentist and a psychologist.[10]

Specific programs also have been developed in the form of workshops to give dentists a practical approach to dealing with these problems. Stress management modules providing a guided self-management approach to coping with stress also are available as the result of a three-year research project funded by Health and Welfare Canada.[7,8,9] These programs and articles suggest the use of relaxation and postural techniques to assist in decreasing musculoskeletal pain and disorders. Cognitive methods help in decreasing worry, enhancing the development of reasonable expectations, and training individuals to avoid irrational thinking.

Other practical guidelines on time management, goal setting and priorizing, improve efficiency. Communication skills promote an openness that leads to productive staff and patient interchange. Suggestions on the basics of health care, nutrition, exercise and social support compliment the personal skills to ensure effective coping.

No doubt, most dentists are able to relate to some of the above sources of stress, and, some of the stress management techniques mentioned are familiar and being practiced. In addition, it would be useful to consider leisure time in terms of its value, how to arrange it, and how to integrate it into the work life.

Health and Your Leisure Life

One aspect of healthy coping that is frequently overlooked involves what we actually do during our leisure and vacation time. The evidence of the need to consider leisure experiences as part of overall stress management is apparent in view of the ever-increasing numbers of people who engage in health-defeating leisure pursuits, often resulting in drug and/or alcohol abuse, or simply untold wasted hours watching others enjoy life via satellite television. The positive impact of healthy leisure upon a person's total being affects mental and physical health, intimate relationships, the ability to communicate and socialize with others, and the ability to handle stress. What then is healthy leisure?

People most often define leisure in terms of activities and time in opposition to work. For example, the more an activity occurs out of the context of work, the more it is considered as leisure. Time that is not obligated or filled with constraint is perceived as leisure time. Both of these concepts have historical roots in the field of recreation. Recreation traditionally has been viewed as time pursuing activities that would refresh one, in order that upon a return to work one could handle work with greater productivity. Time for recreation also has been characterized as a "reward" for work well done. Therefore, recreation has been a concept that is rightfully juxtaposed with ideas pertaining to work. Leisure, however, unlike recreation, is not merely respite from work for the purpose of increasing productivity; nor, is it simply what one does with one's spare time after all other obligations have been met. Healthy leisure does not begin with a vacation, nor is it a reward for being a competent, responsible professional. Healthy leisure has to do with quality of life and, perhaps, is best understood as a "state of mind".[10]

Leisure as a "State of Mind"

Strom, in his book, "*Growing Through Play*,"[13] noted that a leisure state of mind delineates leisure in terms of subjective phenomena and includes a sense of freedom, enjoyment and intrinsic motivation. In his work on "Wellness," McDowell adds that the leisure state of mind is characterized by an experience of well-being and that, unlike work, it can be dynamic and ever-changing.[9] Godbey notes that it may also involve the anticipation of, planning for, the experiencing of, and the reflection about, one's leisure. He further stresses that healthy leisure experiences are realized through choosing activities that are internally, rather than externally, compelled. (5 p. 115).

As children, this mind-set was natural. Within a leisure frame, or play, we learned many adaptive things about the "real" or non-play world. During that stage of life, we had time to explore, create, and learn. Through our play, we tested life, toyed with it, and learned who we were; tried a variety of roles, modelled relationships and learned to understand many things. Our childhood leisure life allowed us to socially and emotionally explore and adapt in relative safety, without schedules or structure, uninterrupted by adult concerns and constraints.

Much of early life then, was spent in healthy leisure pursuits. In contrast, adulthood becomes work-focussed, leaving fewer and fewer opportunities to utilize leisure and play as adaptive tools for living. As adults in professional life, we are governed by schedules, commitments, responsibilities, activities, demands, and plain hard work. Leisure, as a state of mind, often becomes an expectation of fulfillment to be crammed into brief weekends and/or an annual vacation. Frequently, when we

TABLE I

Summary of Work-Leisure Characteristics

	Work Essentials	Leisure Possibilities
1. Location	Predetermined, inside	Free choice, variety available
2. Space	Individual/isolated. Inside, small, confined, precise, restricted movement	Group context or individual, sharing. Inside, outside or combination; large open movement possible
3. Role	Predetermined – Response to demands of others	Free choice. Anything *is* possible, in or out of relationship
4. Schedule	Heavily booked, determined by patient and professional demand	Free choice, balanced between active and non-active/reflective pursuits
5. Variety of Experience	Restricted by professional goals and demands	Endless opportunity for diversity and for change, freedom and enjoyment

TABLE II

Leisure Goals – Needs Check-List

Leisure Needs to be met	Leisure goals			
	Rest	Relaxation	Recreation	Renewal
Confidentiality				
Flexibility				
Amusement				
Fun				
Sociability				
Intimacy				
Creativity				
Openness				
Travel				
New Skills				
Upgrading				

are faced with the opportunity for free time, we become agitated and anxious. Consider the case of Dr. Gordon X.

Case History: Dr. Gordon X

Dr. X is a 46-year-old, married, successful dentist. His typical working day begins upon arising at 6:30 a.m. Following a few stretching exercises, a shower and breakfast, Dr. X. leaves for work at 7:30 a.m. From this time until late evening, every hour is scheduled and committed. Meals are taken within this hectic pace. He normally retires around 11:30 p.m. after watching the late news while sipping a glass or two of wine. He often ends his day feeling that he did not spend enough time with his wife or two children. He also reflects about current financial problems. There never seems to be enough time to deal with everything.

Dr. X does not exercise regularly, nor is he active in sports, theatre, music or the arts, although he occasionally takes in a movie with the family on weekends. He attends church regularly, and is active on the church board. Weekends offer him time to catch up on written work, to do odd jobs around home, and to visit friends. Dr. X spends the rest of his spare time imagining how he would like to take a restful vacation, retire early, and learn to sail. Prior to this year's annual holiday, a family discussion resulted in a decision to spend three weeks in Tahiti. Although Dr. X would have preferred to spend the time at home, and had protested that their finances were in "tough shape," his wife reassured him that they could take out a loan to cover the costs and that she was certain some "sun and fun" would be just the tonic he needed.

After an exhausting and trying journey, the vacation began. Dr. X began to feel very anxious at the thought of having so much free time on his hands, so before unpacking, he and his family developed a schedule that accommodated the many and varied interests of the children, aged 12 and 15. Finally, in a state of fatigue, and worried about how to pay back his loan, Dr. X attempted to relax.

The remainder of the vacation was spent drinking a lot, eating heavily, lying on the beach, and transporting the children to their activities. Upon arriving home, Dr. X was tanned, still tired, and had added ten pounds to his frame. He vaguely wondered why he did not feel invigorated as he prepared to face his first day back at work. The family seemed to have had a wonderful time, and for that he felt grateful.

Your Personal Leisure-Style

In considering the vacation of Dr. X, it is apparent that it did not meet his personal needs for rest and relaxation. The ideal vacation that he had daydreamed about during his working time had not materialized. Rather, it had been a mere escape. The psychological characteristics of the vacation mirrored those of his everyday work life:

1. it was highly scheduled – from the airline and hotel schedule to the plan for daily activities;
2. the location and style of the holiday was determined in response to the demands of others;
3. the loan required to cover the costs added further financial pressure;
4. like his work, the vacation was restricting in that there was little opportunity to engage in spontaneity, innovation, new roles, new experiences, and a variety of situations – all of the adaptive qualities of leisure and play that had been so easily accessible during childhood and that would have enabled him to meet his needs for rest and relaxation;
5. he also had to face the new problem of having gained weight.

It is clear also that Dr. X had directed the satisfaction of all of his leisure needs toward his vacation. The result was that he missed any daily leisure opportunities that might have provided him with a more life-integrating leisure experience. How could he have developed a more healthy leisure plan?

Leisure Self-Awareness

Healthy leisure plans emerge from the roots of self-discovery and heightened self-awareness. McDowell, in discussing leisure "wellness" suggests that when in a leisure state of mind, it is not necessary to solve a problem; rather, it allows you distance from it, and provides release and relief (9 p. 4)[13]. To increase awareness of your leisure self, he suggests that leisure planning should begin by asking yourself questions such as these:

1. How much of my non-work time actually is leisure?
2. How much of my leisure is used to meet obligations and demands?
3. Am I playful at leisure?
4. What was the context of my play? Was I inside or outside?; alone or with others?; active or passive?; intimate or reflective?
5. Was I a risk-taker when at leisure?
6. Am I a participant, or an observer?
7. When was the last time that I really had fun, or had a good laugh?

Norman Cousins, in his article, "Anatomy of an Illness",[4] described the healing properties of laughter in his own life. He presents a convincing exploration of the importance of fun in maintaining a healthy life. In relation to this, McDowell concludes that: "your leisure wellness is simply a measure of how well prepared you are to take what you know about leisure and directly assume and maintain the responsibility to experience an enjoyable, healthful, satisfying and dynamic leisure-style." (Bk 1-p5.[10]).

What is Healthy Leisure?

Utilizing McDowell's concept of Leisure Wellness, a healthy leisure-style and a congruent vacation allow for optimum change from daily activities and it reflects few of the qualities of the work situation. In considering **Table 1**, identify those characteristics that are essential to the dental work place and activity, and note the contrasting leisure possibilities.

While the hours involved in professional activities are heavily scheduled, for example, a vacation should allow for spontaneous decision-making, and, at best, should reflect a balance in favour of an open sched-

TABLE III

Vacation Planning – Steps in Decision Making

1. Look at your present situation and identify possible options for change in your leisure-life. (i.e. for decision making)
2. Clarify those values and personal priorities that would affect your decision. (Review Table 1)
3. Gain information. Focus on the resources in the world around you to find information about goals you want to consider. Check leisure activity files of local recreation centres, education centres and travel advice centres.
4. List your leisure goals and their objectives. Set your goal. (Review Table II).
5. Explore objectives by listing advantages of each one and rank them in order of importance to you.
6. Choose the most satisfying objective(s). (Review Table II).
7. Develop a plan of action.
8. Develop another plan in case your first objective does not work out.
9. Remember, that decisions involve some risk and require time and commitment. Good vacations are worth it!
10. Vacation choices and decisions can be changed, however. If you discover a decision is "wrong" for you after you have tested it thoroughly, you do not need to stay with it! Be flexible – have fun!

ule. Since the dentist's office and the nature of the work limit the physical range of movement during work time, a vacation should provide some opportunity for physical activity and exploration of the out-of-doors.

Matching leisure possibilities with leisure goals, needs and interests can be the most challenging aspect involved in developing a good holiday plan.

Vacation Decision-Making

Godbey (5 p. 168-172), in his review of culture as an influence on leisure, notes four key leisure goals: rest, relaxation, recreation and renewal. He refers to the latter as "developmental leisure." Common needs met through the achievement of these leisure goals include the need for confidentiality, amusement, fun, sociability, personal involvement, creativity, flexibility, openness, success awareness, acquiring new skills, upgrading old skills, geographic and/or climatic changes, new travel experiences, or any possible combination of these (see **Table II**).

In considering **Table II**, and to assist in goal-setting, place a check mark beside those needs that can best be met in relation to the particular leisure goal, or goals, you wish to achieve through your vacation. Refer back to your leisure self-awareness profile and note "obstacles" which might disrupt the vacation plan. List these, and explore ways of removing them. In doing this, utilize the concept of leisure resourcefulness, rather than the idea of leisure resources. In this context, leisure resources might include taking out a loan to fund an expensive vacation, as occurred in the case of Dr. X. This did remove one immediate barrier, only to exacerbate long-term financial concerns. In contrast, leisure resourcefulness implies learning to rely upon oneself as a primary source of leisure fulfillment, rather than choosing commercially expensive options to meet leisure needs.

As noted earlier, part of a good vacation plan does involve matching one's leisure interests with what is available within the real constraints of one's life. A holiday should be an integral part of an overall leisure-life plan, and as such, will reflect some of the qualities of the daily leisure-style. However, regular leisure activities often occur within the home or local community, and too often become routinized. Holidays, on the other hand, provide opportunity for new options. It is important, therefore, to develop a proposal that maximizes the possibility to experience and express life in new ways.

Table III summarizes a good decision-making strategy. Working through the table and incorporating these ideas will assist the development of an individually satisfying plan.

In summary, holidays and healthy leisure choices round out and provide a balance in one's life. They provide a major contribution to one's total well-being and satisfaction in life. They are not only helpful from the point of view of maintaining health, but also can provide opportunities to fulfill other needs that are only partially met through the occupational setting. Leisure and holidays provide opportunities for intimacy, sharing and loving one's family and friends, and time to develop other intellectual interests, as well as to become creative in other modes. Providing for this broader scope in one's life allows the dentist to integrate it back into his practice to make work more enjoyable, as well as to increase the ability to relate to patients as people.

Integrating Vacation Experiences with Work

As noted earlier, a leisure lifestyle is the unique pattern of events that occur when one is in a leisure state of mind. This includes holiday activities, planning for them, and reflection about them after they have occurred. One of the ongoing benefits of a good vacation is its continued impact within a work and/or non-leisure context. Reflection about vacation experiences can be incorporated in practicing self-directed imagery exercises. For example, having had a good holiday with associated memories, one can actively recall the experiences during the day. When this is actively done, it allows one to relax and experience some of the feelings that occurred during that time. This can lead to a physiological change and subsequent relaxation while working. With practice a dentist can learn to recapture these positive feelings during the time available between patients. With repeated reflection, it is possible to have a sense of holiday immediately upon leaving the office. This becomes a true leisure state of mind and helps to challenge the myth that it takes a week to wind down. The psychological benefit occurs in moving easily from a work into a leisure frame, adjusting to "holiday" time within minutes, rather than days.

Conclusions and Suggestions

When establishing a dental practice, arrange for holiday time as an integral part of that practice. Make this apparent to staff so that the cost of holidays can be defrayed by having staff time off coincide with your own holidays. In budgeting and considering loans and other financial obligations, consider working 10½-11 months a year and plan financial matters accordingly. Arrange for varying amounts of time off, so that some free time can be obtained through an extra day on a long weekend. Schedule office hours so that, when wanting to get out of town, rush hour traffic can be avoided on weekends. Dentists who recognize that they have a "Type A," high stress, personality, should make an attempt to schedule holidays at a different pace from office time, being free simply to sit and smell the roses.

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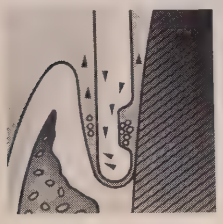

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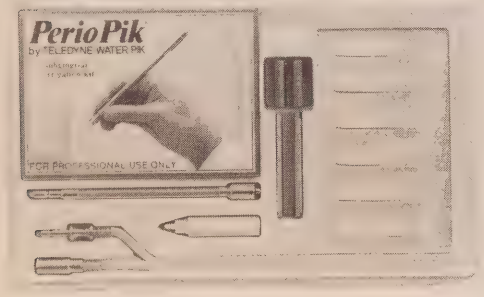

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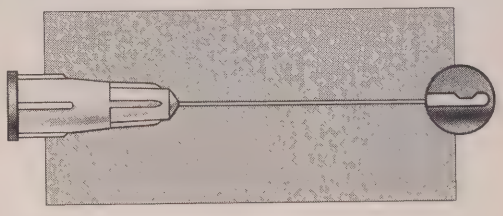

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FUNCTIONAL SCHEDULING

MAXIMIZING THE ROLE OF THE APPOINTMENT BOOK

William F. Shaw, DDS
175 Stillview Road,
Suite 260,
Pointe Claire, P.Q.

DISCUSSION

In a dental practice, the key to the efficient use of time, personnel, and facility is the proper use of the appointment book. Regardless of the dental facility configuration, be it two, three, or four chairs per dentist, the productivity of the configuration depends heavily on how the use of the facility is scheduled in the appointment book.

There are three systems of scheduling commonly used in dental practices. The most popular has been time based ''Unit Booking''. In this system, the patient is scheduled time for his or her next appointment, based on the number of 15 minute periods that it should require to perform the next treatment in his or her treatment plan. For example, the patient's next visit might be five surfaces of amalgam in the lower left quadrant, a service normally taking 30 minutes of treatment time. Thus two units would be requested for the next visit. This system is ideal for single chair configurations, but as soon as additional chairs are added, the system becomes redundant.

The second system of patient scheduling is called ''Time Tracking''. This system uses the principles of ''Unit Booking'', but carries the dentist's scheduling to two or three chairs, directing the dentist to where the next patient is scheduled. This has the advantage of providing for ''changeover time'', and can allow for early anaesthesia as the following patient can be set-up with another assistant in a second chair, allowing the dentist to move directly to treatment, without the costly waiting in changeover. In multiple chair configurations, ''Time Tracking'' is an improvement over ''Unit Booking'', but it has the weakness of incompletely using the facility, and it does not ensure a consistency in income generation, which should be a factor in scheduling design.

The most efficient scheduling method for multiple chair configurations is called ''Functional Booking''. Functional booking does not use time units as a basis of its methodology; rather it uses chair and treatment function as its base.

How does functional booking work

Each chair is given a function. Using a three chair configuration as a model, the following is how these chairs are used functionally. The key chair is called the prime chair. It is booked in blocks of one hour minimum so that in a normal 7-hour working day there would be seven ''Prime'' bookings.

Prime bookings are restricted to operative dentistry, crown and bridge and endodontics. Each appointment in the prime chair is for one hour unless in crown and bridge this is extended to a double or triple time frame. This also means that occasionally a prime appointment will be given for two surfaces of amalgam, but this is a functional rather than a time based system and the residual time, because of a short time service in a prime booking, is used in other ways.

The second chair is called the ''Offset'' chair. Appointments in this chair are booked for one half hour each, and in lightly booked days, they should be held to one hour. The function of the offset chair is to complete the services not provided by the Prime chair or the Hygiene chair. Thus examinations are done in the Offset chair. Crowns and bridges are cemented. Surgery and periodontal surgery are performed in the offset chair as is full and partial denture prosthetics. All adjustments and short consultations are offset bookings, as are all emergencies.

The third chair is the Hygiene Chair. Here, obviously, is the chair where scalings and prophylaxis are performed, as well as fluoride treatments and oral hygiene instruction. The appointments are booked for 45 minutes or one hour, depending on the preference of the hygienist.

Each chair must have its Dental Auxiliary, who is specialized in her function. She is also responsible for the booking of her chair and the reminder calls, whether they are done by her or the receptionist. The Hygiene chair should be manned by an hygienist who also has the responsibility for recalls.

Purposes of functional booking

Functional Booking assures the dentist that his days have adequate restorative dentistry by clearly assigning time, staff and

facility to that aspect of the practice. In today's preventive style of practice, 50 per cent of patient volume is generated through recalls, while this only represents an average of 20 per cent of revenues. Recalls must be accommodated, and are, using the Offset, and Hygiene chairs, while the Prime chair assures the dentist that the income generating restorative services are adequately accommodated.

Functional Booking assures back-up for cancellations and short prime bookings. With three patients booked for the beginning of each hour, a cancellation can be filled by using an Offset or Hygiene patient to fill Prime chair time. It also provides the dentist with the flexibility to do short time restorative services on Offset patients rather than book them in prime time.

Functional booking gives the dental auxiliaries a clear description of their roles and responsibilities. With each chair having a clearly defined role, the assistant assigned becomes a specialist in her responsibility, which includes ensuring that the chair is booked, and that the smooth movement of the Dentist is provided for. This creates a real team spirit among the staff members who function much more effectively when they have clear definition of the part they play in the function of the practice.

The role of the auxiliary

The Prime Chair Assistant should be the best four handed chairside assistant on the staff. As the dentist will be working with the Prime Chair Assistant 70 per cent of the time, there has to be a well developed non verbal system of communication, in which anticipation plays a significant part. As the dentist will spend more time with this assistant than any other person in his life there should be a positive and comfortable relationship.

The most important assistant, however, is the Offset Chair Assistant. She will be spending more time with the patient than will the dentist, and invariably will be the first contact the new patient has with the practice. Her personality, therefore, becomes a vital part of the building of the practice. She must know how to prepare the patient for examination, including taking the immediate and general patient history. She should be able to take radiographs, and where necessary impressions for study casts.

Ideally, when the dentist comes chairside to his offset chair to see an emergency patient, the Offset Assistant should be able to say: "Doctor, this is Mrs Mary Smith. She is a controlled diabetic who has taken her insulin this morning. Her attending physician is Dr. Brown. His number is on the chart. She has pain in her upper left quadrant, and the periapical radiographs are there on the viewer."

The Offset Assistant must be very versatile, as her chair will be used for a variety of services from surgery to prosthetics. She may have to re-cement temporary crowns and make arrangements for denture repairs. She should also be able to discuss possible treatment with the patient, including showing slides or videos to precondition the patient prior to the case presentation being made by the dentist.

Because the Offset Assistant has the dentist chairside only 20 per cent of the time, she is the primary communicator with the patient. After the examination and case presentation is completed, it is she who plans the treatment routing and books the prime appointments with the patient. In some cases, she even discusses the fees and alternative payment arrangements. The right personality as Offset Dental Assistant can be a vital asset to a practice.

The hygienist with her chair are part of the dental team in Functional Booking. It is the hygienist's role to control the preventive programming of the practice. Not only must she perform her traditional role of performing prophylaxis and scaling on her patients, she must determine the frequency of their recalls and coordinate prevention recalls with six months dental examinations. Some patients may be booked quarterly for scaling and prophylaxis, and only annually for a dental examination.

As the hygienist, herself, is a treatment provider, examinations should not be performed in her chair. If a dental examination is planned at the recall visit, the hygienist should book the exam in the Offset chair, immediately following the preventive visit. This avoids patients waiting in a Hygiene chair for the dentist to free himself for the examination. The hygienist then has time for her change-over, and bringing the next patient in for treatment. Any free time thus generated can be used for recalls, or even for taking well deserved breaks.

Functional Booking maximizes the use of the treatment configuration. Those who begin to use it notice immediately that it increases patient flow, as it can take up to four patients per hour to fill a functional system. In spite of this, the dentist and the staff feel more relaxed and efficient as with well defined roles, and flexibility as to the rate of work, the day flows smoother and is less stressful, while more work is being achieved.

The Appointment Book is the master of the time of the dental team. With functional booking, it becomes an instrument that ensures this time is efficiently used, while remaining rewarding and less stressful to the dentist, the staff, and the patients.

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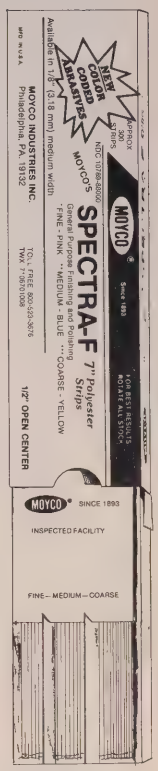

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Dr. Ralph Crawford, CDA's President, is holding a Call the President Day June 4, 1985. From 8:30 am until 4:30 pm, Canadian dentists can express their concerns to Dr. Crawford by calling CDA headquarters, 613-523-1770. Do you have questions, comments or concerns on topics of interest to all Canadian dentists? Are you wondering just what the Canadian Dental Association can do for you? If so, call Dr. Ralph Crawford, June 4. He invites your comments on the manpower problem, the busyness problem, management company audits or government relations. If you have questions or comments about any aspect of CDA or its function in areas such as accreditation, the Dental Awareness Program, the CDA Resource Centre, the Journal, the pamphlet program, fluoridation or any other area, Dr. Crawford is available June 4, from 8:30 to 4:30 to address your concerns or answer your questions.

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June 4, 1985
8:30 to 4:30 Eastern Standard Time

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LE PRÉSIDENT DE L'ADC ATTEND VOTRE APPEL!

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Avez-vous des questions à poser ou des commentaires à formuler sur des sujets qui intéressent tous les dentistes canadiens? Vous demandez-vous ce que l'Association dentaire canadienne peut faire pour vous? Si oui, téléphonez au Dr Crawford. Celui-ci aimerait connaître votre avis touchant les problèmes des ressources en main d'oeuvre dentaire, la clientèle des cabinets, la vérification des sociétés de gestion ou les relations avec le gouvernement. Il sera également ouvert à toute suggestion ou commentaire touchant l'ADC et ses opérations dans les domaines suivants: l'agrément, le Programme de sensibilisation dentaire, le Centre de documentation de l'ADC, le Journal, les publications à l'intention du public, la fluoruration, etc.

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APPELEZ LE PRÉSIDENT

le 4 juin 1985
de 8h30 à 16h30
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CERVICAL SPONDYLOSIS
FOUND ON PANTOMOGRAPHS

A. Ruprecht, DDS, MScD, FRCD(C)
A. Al-Hadary, BChD, MS
M. Batarfi, BDS
Riyadh, Saudi Arabia

ABSTRACT

Two cases of cervical spondylosis are presented. The main point of interest is that both cases were found on pantomographic radiographs made for routine dental treatment of patients who had no history or clinical signs of any spinal abnormality.

SOMMAIRE

Voici deux cas de spondylose cervicale. Le point le plus intéressant, c'est que ces deux cas ont été découverts à l'aide de radiographies pantomographiques prises lors d'examens de routine sur des patients dont l'histoire ne mentionnait aucun désordre de la colonne vertébrale et qui n'en présentaient aucun signe.

Congenital anomalies or pathology of the spine are not usually within the dentist's area of expertise but may come to his attention as part of the history or on examination of perioral disease. The cervical spine is not far removed from a dentist's area of concern, and thus may intrude in the diagnosis when he/she least expects it.

Pantomographic radiographs, such as that produced on the Panorex®* or Orthopantomograph®†, have become a standard part of many dentists' diagnostic records in a variety of levels of diagnostic work-ups. Part of the cervical spine may be projected onto these films near the extreme left and right hand edges, the amount visible varying from patient to patient and machine to machine.

The appearance of the spine on these films infers that a dentist should be aware of the congenital and pathologic processes of the cervical spine in order to recognize variations from the normal.

One of the diseases that may involve the cervical spine as well as other parts of the body is vertebral ankylosing hyperostosis, also known as diffuse idiopathic skeletal hyperostosis (DISH),[1] Forestier's disease,[1-4] ankylosing hyperostosis of the spine,[5] senile ankylosing hyperostosis of the spine,[2] and diffuse iodiopathic skeletal hyperostosis,[3] manifest as osseous outtebrae along part of their periphery. Since there do not appear to be any reports of this growths of the vertebrae that can result in ankylosis, the union of one or more vertdisease being initially diagnosed on pantomographic films, we present two patients in whom Forestier's disease was first identified on radiographs made for dental treatment purposes.

Case Reports

Case 1. A 65-year-old Yemeni male presented to the out-patient clinic of the College of Dentistry for routine dental treatment, involving the removal of teeth and fabrication of complete dentures due to advanced periodontal disease. His medical history and clinical examination were noncontributory. The pantomographic radiograph made as part of the diagnostic workup clearly showed an osseous union of C-3 and C-4, consistent with vertebral ankylosing hyperostosis (Forestier's disease)

Fig. 1. The area of ankylosis involving C-3 and C-4 is seen on a routine orthopantomograph.

*Panorex — S.S. White/Penwalt
†Orthopantomograph Palomex Oy

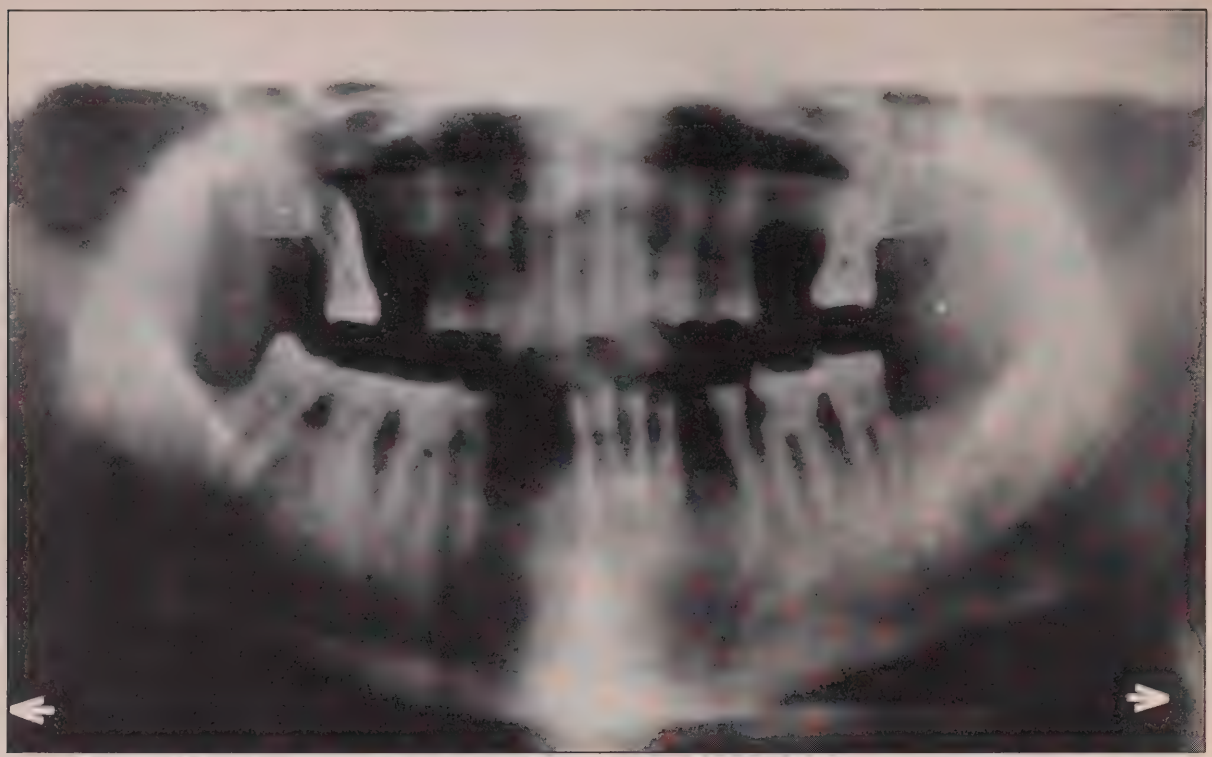

Fig. 2. The area of C-3 and C-4 shows the vertebral abnormality associated with Forestier's disease.

Fig. 3. The spinal ankylosis is seen on a lateral projection of the neck.

(**Fig. 1**). The patient had no complaints related to the cervical spine and did not return for follow-up investigation.

Case 2. A 60-year-old Saudi-Arabian male presented at the out-patient clinic of the College of Dentistry for routine restorative dental treatment. His medical history and clinical examination were non-contributory. As part of the diagnostic work-up, a pantomograph and bite-wing radiographs were taken. On the pantomograph there was an obvious abnormality of the C-3 and C-4 area of the cervical spine (**Fig. 2**). Further radiographic investigation (**Fig. 3**) revealed that the finding on the pantomograph was not an artifact. The appearance was consistent with vertebral ankylosing hyperostosis, also known as Forestier's disease. As the patient was not having any problems related to the spinal abnormality, despite the fact that it was encroaching on the hypopharynx, no treatment was undertaken.

DISCUSSION

The spine may be involved in a variety of diseases that can lead to spondylosis, the ankylosis of the spine due to arthrotic changes resulting in union of one or more vertebrae. Among the better known are psoriatic arthritis,[6] Reiter's syndrome,[7] ankylosing spondylitis,[2] colitic spondylitis,[2] vertebral ankylosing hyperostosis[2] and osteoarthrosis.[2] The interested reader is referred to any of the standard radiological or arthritis textbooks for detailed descriptions of these pathological processes.

Forestier and Lagier,[5] in 1971, described a disease of the spine that produced hyperostosis leading to ankylosis. Although commonly involving the anterior longitudinal ligament, it can also involve other soft tissue elements.[8] The disease may involve any part of the spine, although the sacroiliac joints are often spared.[2] Radiologically, large osseous outgrowths from the vertebrae may be seen. The outline of the body of the vertebra may still be visible. Generally found in older individuals and therefore often called senile ankylosing hyperostosis, the disease may occur in other age groups. Both of our patients were older males. Also, contrary to what the name implies, it may be found in extraspinal sites such as the hip and other major joints.[8]

When the involvement of the spine is extensive, there may be restriction of movement or a complaint of stiffness of the neck. If there is encroachment on the airway or esophagus, dysphagia or interference with function may also present.[3] Although both of our patients demonstrated obvious encroachment on the hypopharynx, neither had symptoms related to the hyperostoses, nor any clinically apparent restriction of movement of the spine. The lesions were coincidental findings on pantomographs made for unrelated dental treatment purposes. In neither case were the patients interested in further follow-up.

SUMMARY

Spinal congenital anomalies or pathology first noted on dental pantomographs do not appear to have been reported in the literature. The common use of pantomographs in dental practice suggests that dentists may, from time to time, note cervical spinal abnormalities in patients without any history of vertebral problems. In some cases these may warrant referral for diagnosis and/or treatment. Since there were no previous reports of such findings on pantomographs, we report two cases of cervical spondylosis consistent with vertebral ankylosing hyperostosis, also known as Forestier's disease.

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Dr. Batarfi is a general practitioner in Saudi Arabia. Reprint requests to Dr. Ruprecht.

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THE DENTAL EXPOSURE NORMALIZATION TECHNIQUE (DENT) PROGRAM IN ALBERTA

Kathy Goss, R.T.(R)
Edmonton, Alberta

ABSTRACT

This report describes how dental x-ray exposures were monitored in Alberta dental offices through a mail-out program. The results of the mail-out and the 420 subsequent dental x-ray unit surveys are also discussed. The mail-out showed that 31 per cent of the x-ray units belonging to participating dentists had exposures above the acceptable ranges. These units were surveyed and recommendations made to reduce patient exposure. The reasons for the out-of-range exposures have been examined and are presented. As a result of Radiation Health Branch recommendations, the calculated average exposure per film was 235 mR in Alberta. This was less than the average of 298 mR/film for all radiation protection agencies that have implemented the program to date.

SOMMAIRE

Ce rapport explique comment on a contrôlé, à l'aide d'un sondage postal, les expositions aux radiographies dentaires dans les cabinets de l'Alberta. Les résultats du sondage et les 420 études qui ont suivi auprès de postes de radiographie font également l'objet de commentaires. Le sondage a révélé que 31 pour cent des postes radiographiques appartenant aux dentistes interrogés produisent des émissions dépassant les niveaux acceptables. Après examen de ces postes, on a fait des recommandations aux dentistes concernés pour qu'ils protègent mieux leurs patients. Les raisons de la surexposition sont présentées et discutées. À la suite des recommandations faites par la Division de la Santé radiographique, on a calculé que l'exposition moyenne par film en Alberta était de 235 mR. Ce chiffre est au-dessous de la moyenne de 298 mR par film enregistrée par toutes les agences de protection contre les radiations qui ont mis le programme en vigueur jusqu'à maintenant.

The Alberta x-ray protection program was established in 1967. Random surveys conducted in 1969 showed the average adult bitewing exposure was excessive and about two-thirds of the x-ray units surveyed had serious deficiencies and/or malfunctions. The Radiation Health Branch then focused on correcting these equipment problems, and by 1978 the average exposure had been reduced by 65 per cent.[1]

In 1982, bitewing exposures were considered fairly reasonable throughout the province. The Dental Exposure Normalization Technique or DENT Program was implemented to emphasize the quality assurance aspect of dental radiography and to assess our own protection program.

The DENT Program was developed by the U.S. Food and Drug Administration's Center for Devices and Radiological Health (CDRH), (formerly known as the Bureau of Radiological Health). It was designed specifically for radiation protection agencies to monitor dental x-ray exposures and to reduce unnecessary exposure. Our branch was fortunate to have the opportunity to participate in the DENT Program. The CDRH provided their expertise, materials, equipment, readout services and data processing as detailed in the DENT Instruction Manual.[2]

To June 30, 1984, 54 United States and Canadian radiation protection agencies have participated in the DENT Program.

OBJECTIVES

The objectives of implementing the DENT Program in the province were to:

1. Identify dental x-ray facilities where patient exposures exceeded the acceptable ranges and to reduce these exposures.
2. Pinpoint problems leading to excessive exposures and make recommendations to remedy these problems.
3. Encourage dental x-ray owners/operators to practise good radiological hygiene.
4. Improve the quality of intraoral radiographs.
5. Evaluate the effectiveness of our existing Radiation Protection Program.
6. Examine the feasibility of purchasing a thermoluminescent dosimetry system to complement or replace parts of our existing protection program.

METHOD

Locating the intraoral units

At our request, the Alberta Dental Association placed a notice in their newsletter to inform their membership of the DENT program and to ask for their cooperation.

An introductory letter including a reply postcard was sent to 1,010 dentists in the province. The reply postcard requested information regarding the number of intraoral x-ray units in each office and if any partners or associates shared the x-ray units.

From the ADA Directory, reply postcards, our files and numerous telephone calls, all known intraoral units in the province were located.

The x-ray exposure cards

The U.S. Center for Devices and Radiological Health supplied assembled x-ray exposure cards and identical quality control

cards. Each card consisted of a thermoluminescent dosimeter (TLD) of lithium fluoride with a protective covering mounted on an instruction card. Lithium fluoride is well suited to this type of program as it stores radiation energy on exposure and retains the information for long periods of time with little fading.[3]

PHASE I – THE MAIL-OUT

In May 1982, 1691 x-ray exposure cards were mailed to 681 dental facilities in the province. The mail-out package included a covering letter, one exposure card with matching identification sticker for each intraoral x-ray unit, and a protective return envelope. The dentists exposed each card as instructed, supplied the technical information as requested and returned the card(s) to the branch. On receipt of the cards, the exposure data were recorded, then the cards and controls were sent for analysis. The TLD readout service was provided by the Winchester Engineering and Analytical Center (WEAC) in Massachusetts, another subsidiary of the US Food and Drug Administration.

Analyzing exposures

During analysis, the TLD reader heats the lithium fluoride which, in turn, emits visible light. The amount of light emitted is proportional to the amount of radiation energy absorbed, therefore allowing radiation exposure to be calculated.

The acceptable x-ray exposure range for an average adult bitewing radiograph varies with the speed of film used and the operating kilovoltage. Acceptable exposure ranges were established by a panel of dentists in conjunction with CDRH.

Because of the specifications of the TLD system, only those exposures more than 20 per cent above or below the acceptable ranges were indicated for investigation.

PHASE II – SURVEYS

Each facility was notified by mail of the TLD reading(s) and the course of action to be followed. Originally it was intended that those x-ray units with high readings and those with low readings would be surveyed. However, due to the time and numbers involved, only those with high readings were surveyed. In all, 420 x-ray units were surveyed.

Radiation exposures were measured at the cone end using a MDH series 1015 x-ray monitor with a 6 cc volume ion chamber. The DENT survey form was used to record the technical information and measurements. Two exposures were made using the dentist's usual adult bitewing exposure factors. If the average of the two exposures was within the acceptable range and the equipment appeared to function properly, the findings were discussed with the dentist and the visit was ended.

If the average mR/film was above the acceptable range, the technical factors were altered to reduce the radiation exposure. Comparative radiographs were taken with the dentist's usual exposure factors and the surveyor's adjusted factors. A dental phantom, consisting of a quadrant of teeth embedded in tissue-equivalent plastic was used.

The radiographs were processed using the manufacturer's recommended processing techniques. The dentist and/or his staff were invited to view the radiographs and discuss film quality, exposure reduction, equipment function and the surveyor's recommendations.

Following the Phase II survey each dentist received a report confirming the results. The data from the completed survey forms have been analyzed and the results are described in the remaining pages of this report.

RESULTS FROM PHASE I – MAILOUT

1. Participation
Response was excellent, with a 93% return.
2. Distribution of bitewing exposures as determined by TLD's
59% within acceptable ranges
31% exceeded acceptable ranges
10% below acceptable ranges
3. Average adult bitewing exposures determined by TLD readings
D Speed film – 316 mR/film
E Speed film – 234 mR/film

RESULTS FROM PHASE II – SURVEYS

1. Average adult bitewing exposures (in mR/film)

a) Dentists' usual exposure factors 325
b) Surveyor's adjusted factors 235
c) Reduction from (a) to (b) 90 or 28%

2. Film Processing

a) Facilities using the sight development method of processing were able to reduce exposures by an average of 37% by changing exposure factors and changing to the time-temperature method of processing (**Table I**).
b) **Table I** also shows that facilities using time-temperature and automatic processing methods had significant reductions in exposure. This was an unexpected result; however, some high exposures before the surveyor adjusted

TABLE I

Developing procedure by average mR/film

Developing Procedure	No. Units	Av. Exposure with Dentist's Exposure factors (mR/film)	Av. Exposure with Surveyor's Adjusted factors (mR/film)	Av. % Reduction at End of DENT Survey
Time-temp	24	319	223	30
Sight	55	325	*206	37
Automatic	336	328	242	26
Unknown	5	216	182	16
All developing procedures combined	420	325	235	28%

*Films were processed according to manufacturer's recommendations.

TABLE II

Operating kVp and average adult bitewing exposure with surveyor's adjusted technical factors

Operating kVp	mR/Film
50-60	458
61-70	271
>70	183

TABLE V

Past and present average adult bitewing exposures in Alberta

Year	mR/Film
1969	920
1978	322
1982-83 with dentist's usual factors	325
1982-83 with surveyor's adjusted factors	235

the techniques were attributed to equipment problems, poor processor maintenance/use and the dentist's preference for darker radiographs. This observation concurs with that of Dr. C. Larry Crabtree in his report of DENT findings.[4]

c) Those automatic processors with no control of developer temperature and no running water appeared to underdeveloped films, necessitating an increase in exposure factors.

d) Of the 223 offices visited, a large number had processing inadequacies:*
67 required more frequent chemical changes;
63 required replenishment of chemicals on a routine basis;
36 were not following the manufacturer's time-temperature instructions;
19 required an increase in automatic processing time;
12 required an increase in automatic processing temperature;
7 were not mixing processing chemicals as per manufacturer's instructions.

e) No dental offices had formal quality assurance programs for processing.

3. Equipment Performance

a) The most prevalent equipment problem was inaccurate and/or inconsistent mechanical exposure timers;

b) 44 x-ray units surveyed had major malfunctions that affected patient exposures;

c) 41 x-ray units had minor malfunctions where owners were advised to call in a service person;

d) for several of the units mentioned in (b) and (c), the owner and/or operator had noticed a change in equipment performance, but had not initiated a service call;

e) most equipment servicing and calibration appear to be a result of warranty work on new equipment or routine Radiation Health Branch surveys.

4. Operating kVp and bitewing exposures

Dental x-ray units operating at 50-60 kVp required 2.5 times the exposure of x-ray units operating at >70 kVp. X-ray units operating at 61-70 kVp required 1.5 times the exposure of those operating at >70 kVp (**Table II**).

5. Film speed and exposure

The results confirmed the manufacturer's exposure guidelines. X-ray units using D speed film required twice the exposure of those using E speed film to obtain similar film densities. **Table III** shows the average exposures for each film speed group.

*Some offices had more than one processing deficiency

6. Observations from the surveys conducted

a) 50 per cent of the x-ray units had a workload of 25-50 films/week;

b) 68 per cent of the x-ray units were operated at 70 kVp or greater;

c) 79 per cent of the x-ray units had a 7-10" cone length;

d) Radiographs exposed by 80 per cent of the x-ray units surveyed were developed in automatic processors;

e) Some examples of questionable operating practices were noted:

(i) operators unsure of how to adjust technical factors to compensate for change to a longer cone

(ii) operators making no technical adjustments when changing to a faster film

(iii) operators not making adjustments in technical factors for variations in projection, patient thickness, age or condition.

f) There was a reluctance of some owners to upgrade or replace poorly functioning equipment.

A comparison of bitewing exposures in Alberta to those of all DENT participants in Canada and the U.S. showed that the average adult bitewing exposure in this province is considerably less than the average of all DENT participants (**Table IV**).

Table V shows a comparison of past and present dental x-ray exposures in Alberta since 1969, and how they have been reduced.

CONCLUSIONS

1. If dental x-ray operators follow the surveyor's recommendations, patient exposure will be minimized.
2. Inadequate film processing is a major cause of patient exposure above the acceptable ranges, and also the cause of poor quality radiographs.
3. Of the dental x-ray units surveyed, 10.5 per cent had equipment malfunctions that affected patient exposures.
4. Dental x-ray units operating at 70 kVp or less result in higher skin entrance exposures than x-ray units operating at more than 70 kVp.
5. Use of E speed film can reduce patient exposure by 50 per cent over D speed film.
6. Unnecessary patient exposure is in some cases due to the owner/operator not understanding the relationship between technical variables, film density and patient exposure.
7. The average adult bitewing exposure in Alberta is lower than the average for all DENT participants.
8. The DENT program surveys reduced patient exposure in dental facilities where exposures were excessive, and improved their film quality.
9. The Radiation Health Branch has been effective in reducing dental exposures over the years, in keeping with the branch objective.
10. At the date of writing this report, no conclusions have been made regarding the feasibility of purchasing a TLD system to complement or replace parts of our existing program. This may be a viable addition to the program, however, further investigation is required.
11. All our objectives, with the exception of the one mentioned in #10 above, have been met.

RECOMMENDATIONS

1. Dental x-ray equipment owners/operators should ensure that they follow the manufacturers' instructions for film processing.
2. Quality assurance programs should be instituted in all dental x-ray facilities including:
   a) routine preventive maintenance of x-ray equipment,
   b) routine preventive maintenance and cleaning of automatic film processors,

TABLE III

Film speed and average adult bitewing exposure with surveyor's adjusted technical factors

Film Speed	mR/Film
D	245
E	121

TABLE IV

Alberta bitewing exposures vs all DENT participants (in mR)

Measurements	Alberta	All DENT participants
a) Average TLD exposure	457	592
b) Average adult bitewing exposure with dentist's usual factors	325	419
c) Average adult bitewing exposure with surveyor's adjusted factors	235	298
d) Average exposure reduction from (b) to (c)	90 (28%)	121 (29%)

c) keeping records of equipment maintenance and performance,
d) keeping manufacturers' instruction manuals on file.

3. All dental x-ray units operating at less than 70 kVp should be replaced with units operating at more than 70 kVp.
4. Dentists should use E speed film if they consider the diagnostic quality acceptable.
5. Dental x-ray training should emphasize the relationships between technical variables, film density and patient exposure.
6. The DENT Program or a comparable type of program should be considered for future use in monitoring dental exposures in the province.

Acknowledgements

On behalf of the Radiation Health Branch, I would like to thank the U.S. Food and Drug Administration's Centre for Devices and Radiological Health for allowing us to participate in the program, and especially Dr. C. Larry Crabtree for his guidance. In addition, thanks to Richard Liberace of WEAC for his assistance.

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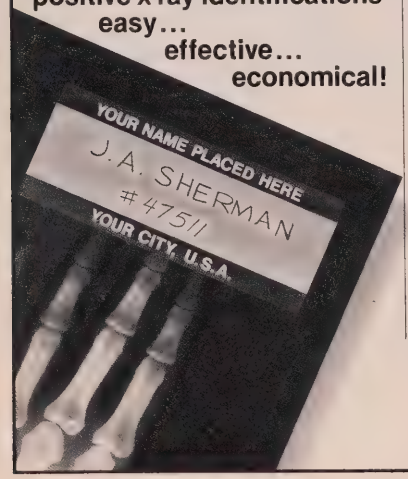

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THE CURRENT STATUS OF PIT AND FISSURE SEALANTS
A REVIEW

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Presented in the Conference on: The Dental Caries Decline — Implications for Private Practice and Public Programs under the title "Sealants in Dental Practice"
February 1 and 2, 1985 McGill University, Montreal, Canada

The Dental Caries Decline: Symposium

On February 1-2, 1985, in Montreal, Quebec, the Canadian Dental Association, and McGill University co-sponsored a symposium entitled "The Dental Caries Decline: Implications for Private Practice and Public Programs." Beginning in this issue of the Journal, the first of a series of papers originating at the conference will be published. In future issues, more papers will be published for the information of our readership.

INTRODUCTION

Introduced twenty years ago, sealants are the newest preventive method. The many clinical and laboratory studies of this technique have been reviewed by several authors[1-11] and, in the United States, a National Institutes of Health Consensus Development Panel has affirmed the safety and efficacy of the procedure.[12] However, because new studies appear regularly, it is important to continue to analyze the reports on this topic so that dental practitioners can fully appreciate its benefits and appropriately utilize it for their patients.

The purposes of this article are to: (1) discuss the need for sealants within the context of a declining caries prevalence; (2) outline their indications for individual patients; (3) critique the effectiveness of the method; and (4) discuss costs in programs of individual patient care.

SOMMAIRE

Apparus il y a 20 ans, les obturateurs constituent la méthode de prévention la plus nouvelle. Les nombreuses études menées en clinique et en laboratoire touchant cette technique ont été révisées par plusieurs auteurs et, aux États-Unis, un groupe d'experts, le National Institutes of Health Consensus Development Panel, *a déclaré que cette procédure est sûre et efficace. Cependant, comme de nouvelles études paraissent régulièrement, il importe que l'on continue à analyser les rapports ayant trait à ce sujet afin que les praticiens dentaires reconnaissent pleinement les avantages des obturations et utilisent adéquatement cette méthode pour leurs patients.*

Cet article a pour but: 1) de commenter le besoin des obturateurs alors que le nombre des caries diminuent, 2) d'en définir les indications pour chaque patient, 3) de critiquer l'efficacité de la méthode, et 4) de commenter le coût des programmes de soins pour chaque patient.

THE NEED FOR DENTAL SEALANTS

In 1965, the one year results of the first clinical trial of a dental sealant were reported by Cueto and Buonocore.[13] This milestone report introduced a unique new caries preventive method to the dental profession and initiated the current era of acid etch dentistry. During the decade when this first sealant report appeared, caries rates in North American children were increasing.[14-16] Based upon a review of caries prevalence reports published before 1970, Ripa justified the introduction of a new caries preventive method specific for pits and fissures by observing that while occlusal surfaces represented only 12.5 per cent of the total surfaces of the permanent dentition, they accounted for approximately 50 per cent of the caries in school children.[17]

Recently, there have been reports from Canada,[18-19] the United States,[20-23] and other developed countries[24-31] that caries rates in children are declining. Stamm reviewed the evidence for this decline in Canadian children from British Columbia and Ontario,[32] and Brunelle and Carlos summarized the findings for the United States.[21] In British Columbia, the caries prevalence (DMFT) of 9-, 13-, and 15-year-olds decreased by approximately 50 per cent between 1960 and 1980. In Ontario, 13-year-old children experienced a similar decline between 1966 and 1982. In the United States, a comparison of data from the 1971-74 Health and Nutrition Examination Survey conducted by the National Center for Health Statistics (NCHS) and the 1979-80 National Caries Prevalence Survey conducted by the National Institute of Dental Research (NIDR) indicates that, between these two surveys, there was a 35 per cent decrease in the DMFT scores of 6- to 11-year-olds and a 26 per cent decrease for 12- to 17-year-olds. In addition, there was an increase in the percentage of caries-free children.

Because this precipitous decline in dental caries coincides with attempts to promote the use of sealants to the practising profes-

sion, the current sealant initiative may appear to be anachronistic. However, the need for sealants can be justified by a more perceptive critique of the caries activity in children than can be ascertained by examining only traditional DMFT and DMFS prevalence data. Scrutiny of the data from the United States leads to the following conclusions which have profound implications for the use of sealants:

(1) The caries decline is not uniform for all tooth surfaces.

(2) The relative distribution of caries on different tooth surfaces has changed, resulting in a *percentage* increase of pit and fissure caries.

(3) The percentage distribution of caries by tooth surface type is similar in optimally fluoridated and fluoride-deficient communities.

(4) The number of children experiencing dental decay still remains high, despite a decrease in the number of lesions experienced.

Disparate Carious Surface Decline

The mean caries prevalence for each tooth surface type recorded in the last two national dental surveys in the United States is listed in **Table I**. There has been a decrease in the absolute amount of caries or fillings on all three surface types. However, while proximal caries has decreased by more than 50 per cent, buccolingual and occlusal caries each have decreased by only 26 per cent. Since occlusal caries always involves the pits and fissures, and buccolingual caries in children is found most frequently in the buccal pits of mandibular molars and the lingual grooves of maxillary molars, it is evident that additional protection is needed for pits and fissures in order to achieve the same degree of caries decline as experienced for the smooth proximal surfaces.

Caries Distribution

The disproportionate reduction in caries of the different tooth surfaces alters the relative distribution of decay (**Table II**). In 1971-74, caries of the proximal surfaces accounted for 24 per cent of the caries activity found in United States school children; in 1979-80, proximal caries comprised only 17 per cent. Conversely, the *percentage* of both occlusal and buccolingual caries increased. Because of the marked decline in caries of the smooth surfaces and the shift in the caries pattern to the pits and fissures, dental decay in children has become predominantly a disease of the pits and fissures.[33]

Fluoridation Effects

Neither the NCHS nor the NIDR survey differentiated between children residing in optimally fluoridated communities and in fluoride-deficient ones. In a recent National Preventive Dentistry Demonstration Program conducted in the United States by the American Fund for Dental Health (AFDH), approximately 25,000 six- to 13-year-old school children from ten cities received caries examinations. Five of the cities were fluoridated and five were fluoride-deficient. Although the cities were not selected to be nationally representative, the AFDH baseline figures confirmed the high percentage of pit and fissure caries, compared to caries of smooth surfaces[34] (**Table III**). While the total number of lesions in the fluoridated communities was 35 per cent less than in the fluoride-deficient ones, the surface distribution of the lesions was very similar. In the fluoridated communities, 94 per cent of the caries was of the pits and fissures (occlusal, buccal, and lingual surfaces), and in fluoride-deficient communities this figure was 89 per cent. These data support the use of sealants for children in both types of communities.

The second most common type of community caries-preventive program is school-based fluoride mouth rinsing, which involves more than 12 million children in the United States.[35] Ripa and co-workers have demonstrated that children participating in a weekly fluoride mouth rinsing program experienced a greater percentage reduction in smooth surface caries than in caries of the pits and fissures.[36] After six years, the surface distribution of caries in fluoride mouth rinse participants was similar to that found by the AFDH for children consuming optimally fluoridated water. Ninety-four per cent of the DMFS score involved the pits and fissures and only six per cent involved the proximal surfaces (**Table IV**). Based upon these findings, Ripa and co-workers believed that the combined use of sealants and fluoride mouth rinsing could have practically eliminated dental decay in this group of children.

Caries-Free Children

The 1979-80 NIDR caries survey reported that 37 per cent of United States children between ages five and 17 were caries-free. However, while 56.7 per cent of elementary school children (ages six-11 years) had a caries-free permanent dentition, only 17.2 per cent of junior and senior high school students (ages 12-17 years) were without decay.[21] By age 17, 89 per cent

TABLE I

Mean Caries Prevalence (DMFS) of Specific Tooth Surfaces in United States Schoolchildren

Surface	NCHS 1971-74	NIDR 1979-80	Diff. No.	Diff. %
Proximal	1.7	0.8	-0.9	-52.9
Buccal-Lingual	1.9	1.4	-0.5	-26.3
Occlusal	3.5	2.6	-0.9	-25.7

Source: Brunelle, J.A. and Carlos, J.P. *J Dent Res*, 1982.

TABLE II

Relative (Percentage) Distribution of Caries in Specific Tooth Surfaces of United States Schoolchildren

Surface	NCHS 1971-74	NIDR 1979-80
Proximal	24	17
Buccal-Lingual	27	29
Occlusal	49	54
Total	**100%**	**100%**

Source: Brunelle and Carlos, *J Dent Res*, 1982.

TABLE III

Relative (Percentage) Distribution of Caries in Specific Tooth Surfaces of United States Schoolchildren from Optimally Fluoridated and Fluoride-Deficient Communities

Surface	Fluoridated Communities	Fluoride-Deficient Communities
Proximal	6	11
Buccal-Lingual	40	35
Occlusal	54	54
Total	**100%**	**100%**

Source: Bohannan, H.M. *J Pub Health Dent*, 1983.

TABLE IV

Relative (Percentage) Distribution of Caries in Specific Tooth Surfaces of Sixth Grade Children Participating In A Weekly School Based Fluoride Mouthrinsing Program

Surface	Baseline	After 6 Years of Fluoride Mouthrinsing
Proximal	10	6
Buccal-Lingual	31	37
Occlusal	59	57
Total	**100.0%**	**100.0%**

Source: Ripa et al, *J Dent Res*, (Abst), 1985.

had at least one lesion.[34] Thus, the figure of 37 per cent caries-free children is misleading because the number of caries-free children decreases with age and few escape adolescence without experiencing tooth decay.

The decline in caries-free children and adolescents is caused by decay in the pits and fissures, indicating the need for an expanded use of sealants despite today's decrease in the prevalence of dental caries.

INDICATIONS FOR SEALANTS

In individual patient care programs, the decision to use sealants may be made at the patient level or at the tooth level. At the patient level, the operator can have a general treatment policy that considers all children potential candidates for sealants or a specific policy that includes only some children.

The approach that considers only selected patients for sealants has been discussed by Simonsen,[37] who recommends triaging patients into three groups:

Group 1: Caries-free patients judged at no risk to decay

Group 2: Patients judged to be at moderate risk to decay

Group 3: Patients with rampant caries at high risk to decay

Simonsen recommends sealing the teeth of patients in Group 2, but not in Groups 1 and 3. While this system will avoid overtreatment by excluding both children who may not get the disease (Group 1) and children whose proximal caries pattern renders the use of sealants ineffectual (Group 3), it can also result in undertreatment by erroneously placing children in Groups 1 or 3 who should have been in Group 2. Unfortunately, this mistake can only be detected retroactively after a patient's teeth develop caries. Simonsen states that, "allowing Group 2 to encroach upon Groups 1 and 3 will minimize errors of judgement." However, by advocating less critical criteria for the categorization of patients, the subjectiveness of this method is enhanced and its specificity is reduced.

A different treatment approach is one that considers all child patients for sealing. At first glance, this policy seems committed to overtreatment. However, considering that by the time of high school graduation 89 per cent of our children have experienced dental decay, and that up to 94 per cent of the caries activity involves the pits and fissures, a policy that includes all children as candidates for sealants is not unrealistic and is justified by the morbidity of the disease. A decade ago, Jackson reached a similar conclusion on the applicability of sealing teeth when he found that pit and fissure lesions accounted for more than 80 per cent of all caries found in 15-year-old English children.[38] He stated that if sealants were only 50 per cent effective, the combination of sealants and water fluoridation could reduce the need for restorations in the permanent teeth of children by approximately 74 per cent.

Once the concept is accepted that all children are *potential* candidates for sealants, the decision of whether to seal no longer is made at the patient level but at the tooth level. At this level, a clinician's diagnostic skills can be utilized more easily since he or she is accustomed to render diagnostic and treatment decisions based upon tooth-oriented criteria. Additionally, while errors in judgement will inevitably occur, they will involve single teeth rather than all of a patient's posterior teeth.

Ripa has described tooth-oriented criteria for the use of sealants.[39] These criteria are based primarily upon a visual-tactile inspection of the pits and fissures of teeth whose proximal surfaces are sound and upon other considerations. The dried pit and fissure surface is first evaluated using a mirror and explorer. The status of the tooth surface will be either carious, questionable, or sound. Frank caries is easily recognized as a break in the surface continuity of the enamel, with softness, and usually with discoloration. Surfaces diagnosed as carious are not to be sealed.* They must be restored.

*The exception is discrete pits or fissures on a tooth surface which are separated by an intact transverse ridge, such as occurs in maxillary permanent molars and mandibular first bicuspids. If one pit or fissure is carious and the other sound, the sound area should be sealed.

A questionable diagnosis is one in which the operator cannot make a definitive decision that the tooth is carious or sound. The explorer tip sticks in the tooth surface but other evidence of caries, such as softness at the tip of the explorer or a white halo of undermining demineralization, is lacking. The "stickiness" may be caused by the explorer wedging between the sound walls of a narrow fissure. Because the surface has not been diagnosed as carious, a restoration is inappropriate. However, since the "sticky" area can easily trap bacteria and food particles, and since cleaning can be difficult, these surfaces should be considered at a heightened level of caries susceptibility. Previously, treatment of these surfaces consisted of "watching" them. This was a euphemism which meant that they were not then indicated for filling, but by observing them over time they would likely decay and then could be restored. This approach was acceptable because dentistry lacked an appropriate treatment for this condition. Today, an approach of "watchful waiting" is unacceptable. A questionable tooth surface is an ideal candidate for sealing.[40] A sealant will prevent that surface from advancing from a questionable status to one of definitive caries. This approach is justified since it has beeen shown that if a diagnostic error occurs and caries is inadvertently sealed, the lesion will not progress, but instead should arrest.[41-48]

The principal diagnostic criteria for a sound pit or fissure is that the enamel surface is hard and resistant to penetration by an explorer. If there is a minute break in the

TABLE V

Tooth Oriented Indications and Contraindications for the Use of Pit and Fissure Sealants

Surface Diagnosis	Clinical Considerations	Do Seal	Do Not Seal
Carious	occlusal anatomy	if pits or fissures are separated by transverse ridge, a sound pit or fissure may be sealed	carious pits or fissures
Questionable	status of proximal surface(s)	sound	carious
	general caries activity	many occlusal lesions; few proximal lesions	many proximal lesions
Sound	occlusal morphology	deep, narrow pits and fissures	broad well-coalesced pits and fissures
	tooth age	recently erupted teeth	teeth caries-free for four years or longer
	status of proximal surface(s)	sound	carious
	general caries activity	many occlusal lesions; few proximal lesions	many proximal lesions

integrity of the enamel surface, but the area is hard, the surface is considered to have an inactive or arrested lesion and it is treated as sound. A sound or caries-free surface *may* be sealed, based upon considerations of occlusal morphology, tooth age, status of the proximal surfaces, and the general caries activity in the mouth. These considerations are listed in **Table V**.

It is important to remember that sealant protection is limited to the pits and fissures. In order to achieve the greatest possible caries reduction, sealants should be used in conjunction with other caries-preventive methods, such as systemic fluorides, professional and/or self-applied topical fluorides, noncariogenic dietary habits, and the use of fluoride-containing dentifrices. Since fluoride has its greatest effect on the smooth areas of the teeth and sealants protect the pits and fissures, a comprehensive caries preventive program should employ both.[49-50]

SEALANT EFFECTIVENESS

Most, if not all, of the sealants currently marketed have a base formulation of dimethacrylates which represent the reaction product of bisphenol A and glycidyl methacrylate (BIS-GMA). The BIS-GMA polymer has been characterized as a hybrid molecule by its developer, Dr. Rafael Bowen, because it has characteristics of both the epoxy and methacrylate groups which constitute its structure.[51] The commercial sealants differ in several respects: some are unfilled while others contain inert filler particles; sealants may be clear, tinted, or opaque; and some set entirely by a chemical initiation system (autopolymerized) while others are photo-initiated with either ultraviolet light or visible light. In addition, sealants are packaged with an etchant solution of phosphoric acid whose concentration may differ, usually between 37 and 50 per cent, according to the manufacturer. While the concentration of phosphoric acid influences the degree of microscopic etching of the enamel,[52] there is no indication that these differences affect the clinical performance of the material. Nor is it known whether filler particles enhance or detract from the clinical efficacy of the product or to what extent the better visibility of the tinted and opaque sealants influence clinical performance. On the other hand, there appears to be a difference in the clinical efficacy of autopolymerized sealants compared to those initiated with ultraviolet light, which will be discussed below.

Because sealants are effective as long as they remain firmly adhered to the tooth, an assessment of their clinical success involves: (1) a determination of the occlusal caries reductions associated with their use; and (2) an evaluation of their clinical retention.

Occlusal Caries Reductions

Clinical studies that test the caries-inhibitory potential of sealants usually compare sealant-treated teeth to untreated contralateral teeth in the same mouth. Thus, the treated and control teeth are exposed to the same intraoral risks, the only difference being the intervention of the sealant. Because teeth are evaluated as treatment-control pairs, an index called "net gain" utilizes the fate of paired teeth to analyze the treatment effectiveness of sealants. This method recognizes that four outcomes are possible for each tooth pair; viz., treated sound and control carious, treated carious and control carious, treated sound and control sound, and treated carious and control sound. "Net gain" is the absolute number of treated teeth estimated to have been saved from caries by the sealant treatment. It is calculated by subtracting the number of treated carious, control sound pairs from the number of treated sound, control carious pairs.

The ability of sealants to inhibit caries has also been evaluated by the "percent effectiveness" method. It is calculated by dividing the net gain by the total number of carious control teeth and multiplying by 100 to obtain a percentage. Since the percent effectiveness is the same as the percent caries reduction which is the traditional method for calculating other caries preventive agents, such as topical fluorides, it is the method that is used in this review.

Table VI presents the occlusal caries reductions for permanent teeth obtained from 41 reports of approximately two dozen clinical sealant studies.[53-93] The results are grouped according to the interval between sealant application and examination and are listed in decreasing order of effectiveness. There is a substantial variation in the occlusal caries reductions reported. Nevertheless, by disregarding the particulars of the individual studies and averaging the results on an annual basis, there are very respectable occlusal caries reductions of 82, 68, 65, 43, 36, 40, and 34 per cent from one through seven years after sealant application, respectively. Since most of these studies applied sealants only once and then observed the teeth for the duration of the investigation, the results represent a dramatic reduction in caries on the most susceptible surfaces, achieved with a minimum amount of effort.

Because an ultraviolet light activated sealant was the first to receive extensive clinical testing, at one time there were more published reports of this type of material than of chemically initiated systems, and the ultraviolet light initiated material had been tested in trials of greater duration. Now, however, the number of reports of chemically initiated sealants has increased, and both types of sealants have been tested in studies lasting up to seven years. A perusal of **Table VI** indicates that as the duration of the trials increase, the chemically initiated sealants outperform the ultraviolet light cured sealant. In a seven year study which directly compared the caries-inhibitory capabilities of the two sealant types, Brooks and co-workers[71,78] and Mertz-Fairhurst and co-workers[83,92,93] reported that a chemically initiated sealant provided superior caries protection. There have been no published reports of caries inhibition using a visible light initiated system.

Sealant Retention

Sealants contain no active ingredients. Their preventive function is achieved by their adhering to the enamel surface and physically occluding the pits and fissures from the rest of the oral environment. As long as the sealant remains intact, caries should not develop beneath it. This is because of the intimate bond between the sealant and etched enamel surface[94] which prevents significant marginal leakage.[95,96] Thus, the longevity of a sealant on a tooth; i.e., its retention, is important because those surfaces in which sealant completely occludes the pits and fissures should not decay. In this context, retention is a prime determinant of sealant success.

Sealant retention from one to seven years after application is reported in **Table VII**.[53-56,58-63,65-73,75-89,91-93,97-126] There are 67 reports from approximately three dozen investigators or investigating teams. There are one and a half times more reports on sealant retention (**Table VII**) than on caries inhibition using sealants (**Table VI**). This is because as the positive reports of sealant efficacy mounted, investigators felt that children should not be denied the caries-preventive benefits of sealants. Thus, the half mouth studies, in which teeth on one side of the mouth were sealed and teeth on the other side were left untreated, were abandoned. Instead, the more recent sealant studies have used a whole mouth design in which all of the teeth in subjects' mouths are treated. In these studies, children receive the maximum benefits from participating in the program and sealant success is judged on the basis of retention.

The data in **Table VII** are arranged according to the interval between sealant application and examination, and are listed in decreasing order of retention. Although, at recall, a tooth may have all or part of its pits and fissures covered with sealant, only completely covered teeth are included in the table. Like the figures for occlusal caries reductions, sealant retention also demonstrates wide variability for a given time

interval after placement. However, by ignoring the particulars of the individual studies and averaging the results with time, the average retention figures from one to seven years after sealant application are 80, 71, 58, 51, 43, 54, and 49 per cent. With one exception,[57,90,124] sealants were applied only once to the teeth. Thus, years of protection were provided to the most caries-susceptible tooth surfaces with only a single treatment.

A review of the data in **Table VII** indicates that for comparable time periods, chemically initiated sealants have a greater longevity in the mouth than ultraviolet light initiated sealants. This difference in clinical performance is substantiated by the results of studies which clinically compared the two sealant types. Of six comparative studies, one found no difference in retention between a chemically initiated and ultraviolet light initiated sealant,[97] one found the ultraviolet light initiated sealant to be superior,[54] and four reported better retention with a chemically initiated sealant.[71,78,82,92,93,100,102,105,116,126] Two visible light initiated sealants have received Provisional Acceptance by the American Dental Association.[127]** However, there are few published reports available on the clinical performance of this newest sealant system. Two reports of one year's duration, listed in **Table VII**, found similar retention for visible light initiated and chemically initiated sealant systems.[99,108] A three-year report found better retention for a chemically initiated sealant.[123] Six month figures on the retention of visible light initiated sealants have been reported,[128] and the results of a two-year comparative study between a visible light initiated sealant and a chemically cured sealant have been presented in abstract form.[129] However, because of the short duration of the one study, and the lack of a complete published report of the other, they are not listed in the table.

One probable explanation for the generally lower retention of the ultraviolet light initiated materials than the chemically initiated ones is that the ultraviolet initiated sealants were the first BIS-GMA sealants tested. At that early stage in the development of the technique, many investigators and clinicians did not appreciate the stringent clinical conditions that were necessary for success. This, however, does not explain the differences in results from comparative studies that tested both systems. Dennison and Powers have reported that the physical properties of BIS-GMA sealants are similar, and, therefore, differences in clinical results should not be due to intrinsic differences

**As of this writing, a third visible light system has also received Provisional Acceptance

TABLE VI

Occlusal Caries Reductions from the Use of Sealants on Permanent Teeth

Study	Type of Permanent Teeth	Polymerization Method	Percent Occlusal Caries Reduction
	ONE YEAR AFTER SEALANT APPLICATION		
Buonocore[53]	premolars, 1st & 2nd molars	UV	100
Rock[54]	premolars, 1st & 2nd molars	UV	100
	premolars, 1st & 2nd molars	Chem	81
Houpt & Sheykholeslam[55]	1st molars	Chem	91
Bojanini et al.[56]	1st molars	Chem	91
Bagramian et al.[57]	1st molars	UV	88
	premolars, 1st & 2nd molars	UV	79
Charbeneau et al.[58]	1st molars	Chem	83
Charbeneau & Dennison[59]	1st molars	Chem	83
Low[60]	premolars, 1st & 2nd molars	UV	82
McCune et al.[61]	premolars, 1st & 2nd molars	UV	81-85*
Thylstrup & Poulsen[62]	1st molars	Chem	70
Rock et al[63]	1st molars	Chem	67
Rock[64]	premolars, 1st & 2nd molars	UV	65
Gourley[65]	premolars, 1st & 2nd (?) molars	UV	65
	ONE AND A HALF YEARS AFTER SEALANT APPLICATION		
Meurman et al.[66]	1st molars	UV	88
Charbeneau et al.[58]	1st molars	Chem	76
	TWO YEARS AFTER SEALANT APPLICATION		
Buonocore[67]	premolars, 1st & 2nd molars	UV	99
Rock[68]	premolars, 1st & 2nd molars	UV	99
	premolars, 1st & 2nd molrs	Chem	84
McCune et al.[69]	1st molars	Chem	93
Sheykholeslam & Houpt[70]	1st molars	Chem	88
Bagramian et al.[57]	premolars, 1st and 2nd molars	UV	77
	1st molars	UV	74
Low[60]	premolars, 1st & 2nd molars	UV	77
Charbeneau & Dennison[59]	1st molars	Chem	74
Brooks et al[71]	1st molars	Chem	71
	1st molars	UV	38
Horowitz et al.[72]	premolars, 1st & 2nd molars	UV	67
Gourley[73]	premolars, 1st & 2nd (?) molars	UV	58
Going et al.[74]	premolars, 1st & 2nd molars	UV	55
Higson[75]	1st molars	UV	23
Burt et al.[76]	premolars, 1st & 2nd molars	UV	14
	THREE YEARS AFTER SEALANT APPLICANT		
McCune et al.[69]	1st molars	Chem	85
Houpt & Shey[77]	1st molars	Chem	78
Bagramian et al.[57]	premolars, 1st & 2nd molars	UV	73
	1st molars	UV	73
Brooks et al.[78]	1st molars	Chem	69
	1st molars	UV	39
Rock[79]	premolars, 1st & 2nd molars	UV	68
Richardson et al.[80]	1st molars	Chem	64
Charbeneau & Dennison[59]	1st molars	Chem	64
Rock & Bradnock[81]	1st molars	Chem	36
	FOUR YEARS AFTER SEALANT APPLICATION		
Richardson et al.[82]	1st molars	Chem	62
Mertz-Fairhurst et al.[83]	1st molars	Chem	62**
	1st molars	UV	14**
Charbeneau & Dennison[59]	1st molars	Chem	54
Horowitz et al.[84]	premolars, 1st & 2nd molars	UV	45
Going et al.[85]	premolars, 1st & 2nd molars	UV	43
Leake & Martinello[86]	1st molars	UV	22
	FIVE YEARS AFTER SEALANT APPLICATION		
Richardson et al.[87]	premolars, 1st & 2nd molars	UV	58
Gibson et al.[88]	1st molars	Chem	51
Horowitz et al.[89]	premolars, 1st & 2nd molars	UV	37
Bagramian[90]	premolars, 1st & 2nd molars	UV	42-17***
	1st molars	UV	32-17***
	SIX YEARS AFTER SEALANT APPLICATION		
Houpt & Shey[91]	1st molars	Chem	56
Mertz-Fairhurst et al.[92]	1st molars	Chem	55
		UV	8
	SEVEN YEARS AFTER SEALANT APPLICATION		
Mertz-Fairhurst et al.[93]	1st molars	Chem	55
		UV	12

UV = Ultraviolet light polymerized sealant
Chem = Chemically polymerized sealant
* 2 examiners
** 4.5 years after application
*** retreatments for 5 years; retreatments for 3 years, respectively

between products.[130] Studies have shown, however, that the ultraviolet radiation intensity and exposure time is critical for a proper set of the ultraviolet light initiated systems.[131] One commercially marketed ultraviolet light initiated product (Alpaseal®, Amalgamated Dental Co., Ltd.) was shown not to set adequately in-depth and to set slowly, which could have resulted in incomplete polymerization during clinical use, resulting in sealant loss.[132,133] A study published in 1977 found that the then-marketed ultraviolet lamps did not always produce ultraviolet radiation sufficient to completely polymerize the sealant within the manufacturer's recommended exposure times.[134] The investigators suggested that this deficiency was one possible explanation for the high sealant losses reported in some clinical trials of ultraviolet light initiated sealants. Six years later, the same laboratory found the current marketed ultraviolet lamps to be performing above the minimum standards necessary for adequate sealant polymerization.[135] The two sealants most often compared in clinical trials have been the chemically initiated Delton® (Johnson and Johnson Dental Products Co.) and the ultraviolet light initiated Nuva Seal® (L.D. Caulk Co.). Laboratory studies have found that the penetration coefficient is higher and the contact angle is lower for Delton than for Nuva Seal.[136,137] These properties should result in better wetting and increased penetration of Delton into the tooth which, theoretically, should enhance this product's clinical performance.

The sealant method is very dependent upon clinical technique. Success or failure depends on the proper performance of a series of seemingly insignificant steps.[4] The retention range reported in the studies listed in **Table VII** is undoubtedly due, in large part, to the influence of these clinical factors on the adherent ability of the sealants. The primary determinants of success are satisfactory etching, maintaining a contaminant-free enamel surface, and maitaining a dry field of operation. Etching produces microscopic porosities in the enamel surface into which the unpolymerized sealant flows. The sealant hardens in tag-like projections which attach the material to the surface of the tooth.[94,138] Contamination of the etched enamel surface before the application of sealant will prevent proper tag formation.[139] A particular problem is salivary contamination. The lower bond strengths produced between saliva-contaminated etched enamel and a sealant should ultimately result in a sealant's clinical failure.[140] Accidental contamination by saliva, particularly when treating newly erupted first permanent molars in 6- and

TABLE VII

Retention of Occlusal Sealants on Permanent Teeth

Study	Type of Permanent Teeth	Polymerization Method	Percent Retention [Completely Covered Teeth]
	ONE YEAR AFTER SEALANT APPLICATION		
Stephen et al.[97]	1st molars	UV	100
	1st molars	Chem	99
Buonocore[53]	premolars, 1st & 2nd molars	UV	99
Simonsen[98]	premolars, 1st & 2nd molars	Chem	96
Sveen & Jensen[99]	premolars, 1st & 2nd molars	Chem	96
	premolars, 1st & 2nd molars	V-L	94
Brooks et al.[100]	1st molars	Chem	95
	1st molars	UV	84
Stephen[101]	premolars, 1st & 2nd molars	UV	95
	premolars, 1st & 2nd molars	UV	90
Li et al.[102]	premolars, 1st & 2nd molars	Chem	94
	premolars, 1st & 2nd molars	UV	82
Houpt & Sheykholeslam[55]	1st molars	Chem	94
Stephen et al.[103]	1st molars	UV	93
Eidelman et al.[104]	1st & 2nd molars	Chem	93
	1st & 2nd molars	Chem	92
Bojanini et al.[56]	1st molars	Chem	92
Low[60]	premolars, 1st & 2nd molars	UV	90
McCune et al.[61]	premolars, 1st & 2nd molars	UV	88
Ferguson & Ripa[105]	premolars, 1st & 2nd molars	Chem	88
	premolars, 1st & 2nd molars	UV	70
Gourley[65]	premolars, 1st & 2nd (?) molars	UV	87
Rock[54]	premolars, 1st & 2nd molars	UV	86
	premolars, 1st & 2nd molars	Chem	53
Rock et al.[63]	premolars, 1st & 2nd molars	Chem	85
	1st molars	Chem	53
Charbeneau et al.[58]	1st molars	Chem	79
Charbeneau & Dennison[59]	1st molars	Chem	79
Leske et al.[106]/Cons et al.[107]	1st molars	UV	77
Rock & Evans[108]	1st molars	Chem	76
	1st molars	V-L	75
Thylstrup & Poulsen[62]	1st molars	Chem	73
Risager & Poulsen[109]	1st molars	UV	69
Harris et al.[110]	premolars, 1st & 2nd molars	UV	54
Fuks et al.[111]	premolars, 1st & 2nd molars	Chem	60
Cline & Messer[112]	premolars, 1st & 2nd molars	UV	58
Rock[64]	premolars, 1st & 2nd molars	UV	54
Stiles et al.[113]	?	UV	51
Whitehurst & Soni[114]	1st & 2nd molars	UV	18
	ONE AND A HALF YEARS AFTER SEALANT APPLICATION		
Li et al.[102]	premolars, 1st & 2nd molars	Chem	92
	premolars, 1st & 2nd molars	UV	77
Meurman et al.[66]	1st molars	UV	88
Low[60]	premolars, 1st & 2nd molars	UV	81
Charbeneau et al.[58]	1st molars	Chem	76
Whitehurst & Soni[114]	1st & 2nd molars	UV	10
	TWO YEARS AFTER SEALANT APPLICATION		
Simonsen[115]	premolars, 1st & 2nd molars	Chem	96
Williams et al.[116]	premolars, 1st & 2nd molars	Chem	96
	premolars, 1st & 2nd molars	UV	53
Eidelman et al.[104]	1st & 2nd molars	Chem	96
	1st & 2nd molars	Chem	88
Ball[117]	premolars, 1st & 2nd molars	Chem	94
Li et al.[102]	premolars, 1st & 2nd molars	Chem	92
	premolars, 1st & 2nd molars	UV	78
McCune et al.[69]	1st molars	Chem	88
Buonocore[67]	premolars, 1st & 2nd molars	UV	87
Sheykholeslam & Houpt[70]	1st molars	Chem	85
Brooks et al.[71]	1st molars	Chem	84
	1st molars	UV	58

Continued next page.

Study	Type of Permanent Teeth	Polymerization Method	Percent Retention | Completely Covered Teeth |
Stephen[101]	premolars, 1st & 2nd molars	UV	83
	premolars, 1st & 2nd molars	UV	79
Rock[68]	premolars, 1st & 2nd molars	UV	80
Gourley[73]	premolars, 1st & 2nd (?) molars	UV	78
Horowitz et al.[72]	premolars, 1st & 2nd molars	UV	73
Low[60]	premolars, 1st & 2nd molars	UV	72
Charbeneau & Dennison[59]	1st molars	Chem	71
Going et al.[118]	premolars, 1st & 2nd molars	UV	69
Richardson et al.[119]	premolars, 1st & 2nd molars	UV	61
Poulsen et al.[120]	1st molars	Chem	58
Rock[68]	premolars, 1st & 2nd molars	Chem	52
Cline & Messer[112]	premolars, 1st & 2nd molars	UV	52
Leske et al.[106]/Cons et al.[107]	1st molars	UV	50
Harris et al.[110]	premolars, 1st & 2nd molars	UV	45
Burt et al.[76]	premolars, 1st & 2nd molars	UV	27
Higson[75]	1st molars	UV	3
	THREE YEARS AFTER SEALANT APPLICATION		
Simonsen[121]	premolars, 1st & 2nd molars	Chem	94
McCune et al.[69]	1st molars	Chem	88
Brooks et al.[78]	1st molars	Chem	80
	1st molars	UV	60
Houpt & Shey[77]	1st molars	Chem	77
Rock & Bradnock[81]	premolars, 1st & 2nd molars	Chem	77
	1st molars	Chem	41
Richardson et al.[80]	1st molars	Chem	75
Anson et al.[122]	premolars, 1st & 2nd molars	UV	75
Rock[79]	premolars, 1st & 2nd molars	UV	70
Charbeneau & Dennison[59]	1st molars	Chem	60
Rock & Evans[123]	1st molars	Chem	56
	1st molars	V-L	43
Cline & Messer[112]	premolars, 1st & 2nd molars	UV	41
Harris et al.[110]	premolars, 1st & 2nd molars	UV	37
Bagramian et al.[124]	premolars, 1st & 2nd molars	UV	37
	1st molars	UV	11
Messer & Cline[125]	premolars, 1st & 2nd molars	UV	34
Leske et al.[106]/Cons et al.[107]	1st molars	UV	33
	FOUR YEARS AFTER SEALANT APPLICATION		
Williams & Winter[126]	premolars, 1st & 2nd molars	Chem	88
	premolars, 1st & 2nd molars	UV	36
Mertz-Fairhurst et al.[83]	1st perm. molars	Chem	72*
	1st perm. molars	UV	35*
Richardson et al.[82]	1st molars	Chem	69
Charbeneau & Dennison[59]	1st molars	Chem	52
Horowitz et al.[84]	premolars, 1st & 2nd molars	UV	50
Going et al.[85]	premolars, 1st & 2nd molars	UV	50
Cline & Messer[112]	premolars, 1st & 2nd molars	UV	34
Leake & Martinello[86]	1st molars	UV	22
	FIVE YEARS AFTER SEALANT APPLICATION		
Gibson et al.[88]	1st molars	Chem	67
Horowitz et al.[89]	premolars, 1st & 2nd molars	UV	42
Richardson et al.[87]	premolars, 1st & 2nd molars	UV	19
	SIX YEARS AFTER SEALANT APPLICATION		
Mertz-Fairhurst et al.[92]	1st molars	Chem	68
	1st molars	UV	37
Houpt & Shey[91]	1st molars	Chem	58
	SEVEN YEARS AFTER SEALANT APPLICATION		
Mertz-Fairhurst et al.[92]	1st molars	Chem	66
	1st molars	UV	31

UV = ultraviolet light polymerized sealant
Chem = chemically polymerized sealant
V-L = visible light polymerized sealant
* 4.5 years after application

7-year-old children could partially explain the relatively poor retention rates in some studies involving young children.[76,141] In separate studies, Stephen found better retention in 8- to 11-year-old children, compared to 6- and 7-year-olds,[101] and Rock and co-workers found better retention in 12-year-olds than 6- and 7-year-olds.[63,81] The effects of salivary contamination can also partially explain why most studies have reported better sealant retention on the premolars, which can be more easily isolated, than the permanent molars where the maintenance of a dry field is more difficult.[53,64,72,102,111,112,117,119,124] Sarhan and co-workers found that if saliva was in contact with etched enamel for 60 seconds, the resultant tensile bond strength between the sealant and enamel was significantly reduced even though the enamel was washed before the sealant was applied.[142] In a clinical situation, a 60-second contamination period is unlikely. However, Thomson and co-workers found as little as 10 seconds of salivary contamination could significantly reduce the bond strength between sealant and etched enamel, but the effects of this short exposure to saliva could be reversed by washing.[140]

The need for strict dryness suggests that use of a rubber dam should improve success. However, most dentists do not use a rubber dam for routine procedures[143] and advocacy of its use would undoubtedly have a negative effect on sealant utilization by practising dentists. Moreover, Eidelman and co-workers have shown that, in a clinical practice, use of a rubber dam did not improve the retention of a chemically initiated sealant,[104] and Ferguson and Ripa found that use of the dam improved the retention of an ultraviolet light initiated sealant placed by undergraduate dental students but did not improve the retention of a chemically initiated one.[105] Therefore, the routine use of a rubber dam when applying sealants is not indicated.

Only after the clinical protocol of sealant application had been in use for several years did laboratory studies provide the scientific basis for these procedures. Thus, Hormati, *et al.* verified the importance of a contaminant-free enamel surface for bonding,[144] Miura and co-workers showed that maximum bond strength between the etched enamel surface and sealant was achieved when a prophylaxis preceded the acid etching step,[145] and Williams and von Faunhofer showed that the combination of a 60-second etch followed by 10 seconds of washing produced high bond strengths.[146]

Laboratory studies have found that the bond between etched enamel and sealants is quite sensitive to such factors as enamel

surface contamination and variations in the etching, washing, and drying times, indicating that a rigorous clinical protocol must be followed to ensure a successful clinical outcome.[146-149] While some laboratory studies have suggested different etching times,[146] or that a preliminary prophylaxis of the surface to be etched need not be performed,[147] and although some clinical studies have been done with variations in the application procedure,[60,91,115,117,121,150] there is insufficient evidence to recommend changes in the currently recommended clinical procedure which involves a prophylaxis with a slurry of pumice, acid etching for 60 seconds, and washing for a minimum of 10 seconds.

Success in Dental Offices

The caries inhibition and retention reported in **Tables VI** and **VII** were derived mainly from school-based programs. The principal purpose of most of these programs was to obtain information concerning the effectiveness and longevity of a *single application* of sealant. Helminen and co-workers believe that a single sealant application will only postpone and not prevent the inevitable occlusal lesion,[151] and in practice sealants are not meant to be applied only once. After the initial application, sealants should be checked periodically and reapplications performed, if necessary. Because patients in dental practices are usually placed on six- or 12-months recall, the dental office provides an excellent opportunity to monitor the success of sealants under reapplication conditions.

The criteria for success of office-applied sealants are different from those of a clinical field trial. In the office, the practitioner is concerned with the treatment status at recall of the sealed tooth: Is the sealant intact and the tooth caries-free, requiring no treatment? Is the sealant partly or completely missing but the tooth sound, requiring sealant reapplication? Or, has sealant been lost and the exposed area become carious requiring restoration?

Table VIII presents information from three private practices in which the recall status of sealed teeth was reported on a treatment-need basis.[152-154] The sealant treated teeth were followed for up to five years. The range of resealed teeth ranged from four to 20 per cent, and, in two of the office programs, one per cent or less of the initially sealed teeth required restoration.

THE ECONOMICS OF SEALANT APPLICATION

Because an operator or an operating team can treat only one patient at a time, sealant application is a labor-intensive method whose principal cost is determined by the fee of the operator.[155] Since dental auxiliaries' time is reimbursed at a lower rate than dentists', delegating this procedure should reduce the office costs associated with it. The American Dental Association has stated that the sealant procedure is one that can reasonably be performed by trained auxiliaries,[156] and an American Dental Association sponsored conference on sealants concluded that sealants are cost effective "especially if applied by auxiliaries."[157] Currently, the dental practice acts of more than 30 states allow dental assistants and/or dental hygienists to place sealants.[158-160]

Despite the economic advantage of delegating the application of sealants to auxiliaries, Frazier, who reviewed sealant use by dentists in private practice, found that even in states that allowed hygienists to apply sealants, the practice was uncommon.[160] She emphasized the paradox that delegation of this function was low, despite other studies having reported that dentists were willing to have auxiliaries apply sealants[161] and that, in some instances, delegation of sealant treatment was occurring even though a state's dental practice act did not permit it.[162]

Sealant Fees

The fee for sealant treatment must be determined by internal office economics and is mainly predicated upon the salary level of the operator performing the service. Since dental assistants, hygienists, or dentists may apply sealants, it is not surprising that a national survey of practitioners' fees, conducted by the American Dental Association, found that the fee most often charged by general practitioners for sealing a single tooth was $10 with a range (10th to 95th percentile) of $5 to $25. The fee most often charged for sealing a single quadrant was $20, with a range of $10 to $60.[163]

Sealants versus Amalgams

Dentists in practice often opt to use a one-surface amalgam restoration instead of a sealant.[164-166] However, *sealants and amalgam restorations should not be regarded as alternative treatments since sealants are used to prevent teeth from becoming carious while amalgams are used to restore teeth after caries has occurred.* Despite the inappropriateness of considering a sealant or an amalgam as treatment options for the same tooth,[167] Burt believes that because a decision between a sealant and an amalgam restoration is made by many in private practice, a comparison between sealants and amalgams is legitimate within the private practice context.[168]

In independent studies, both Tonn and Handelman found that sealants could be applied in half the time or less than that to place amalgam restorations.[154,169] Dennison and Straffon also reported sealants could be placed in less than one-half the time it took to place one-surface amalgam restorations: six minutes 20 seconds for sealants compared to 13 minutes 53 seconds for amalgams.[170] During a four-year evaluation period, the need to reapply some sealants increased the average sealant treatment time to 10:02 per tooth, while refinishing or replacement of amalgam restorations increased the average amalgam treatment time to 14:07. Thus, over four years, the average time to treat a sound tooth with sealants was 29 per cent less than that required to treat a diseased tooth with amalgam.

Because sealants can be applied in less

TABLE VIII

Recall Status of Sealed Permanent Teeth Treated in Private Dental Practices

Study	Evalution Period	No. Treated Teeth	Recall Status Resealed	Recall Status Restored
Doyle & Brose[152]	up to 5 yrs.*	2052	299(15%)	556(27%)
Isler et al.[153]	up to 5 yrs.**	2484	93(4%)	14(1%)
Tonn[154]	2 yrs.	502	99(20%)	1(.1%)

* 63 percent of the treated teeth were followed for three or more years
**74 per cent of the treated teeth were followed for two years or less

time than amalgam restorations, and because, in some states, they can be placed by dental auxiliaries, the fee for this service should be half as much or less than the fees for one-surface amalgams. The mean fee in the United States for sealing a single tooth is $11.14, which is 47 per cent less than the mean fee for a one-surface amalgam restoration.[163] Thus, the more favorable cost factors associated with sealants are being passed on to the consumer, although an even greater differential in the fees for these two services should be possible.

Some practitioners prefer to use amalgam because they believe the treatment to be more permanent than sealants.[165] However, many studies have shown that amalgams are not long-lasting and that much of a dentist's restorative effort is spent replacing faulty amalgam fillings.[171-178] Two British studies found that 50 per cent of the amalgam restorations placed in practice were replaced within five to ten years,[172,173] and a study in Vancouver, B.C., found that the average dentist replaced 6.6 amalgam fillings per day.[176] Bohannan has emphasized that studies on the longevity of amalgam restorations contradicts the notion that they are long-lasting.[179]

Cost-Benefit of Sealants

The cost-benefit and cost effectiveness of sealants have been addressed in several recent publications.[155,168,180,181] Unfortunately, it is difficult to factor into a cost equation the many intangible benefits of sealants such as maintaining a tooth free of decay, reducing or eliminating pain and discomfort associated with a diseased tooth, preventing weakening of tooth structure by the excessive drilling of tooth tissue, and reducing the time lost from school and the workplace as parents accompany their children on dental appointments to treat the sequelae of dental decay.

The cost of sealant treatment can be minimized by following these guidelines:

(1) Delegating sealant treatment to auxiliary personnel where legally permitted.

(2) Selecting commercial products that have the most favorable retention rates and using only American Dental Association accepted products.[127]

(3) Following a meticulous application procedure in order to maximize the longevity of the sealants and minimize the number of reapplications.

DISCUSSION AND SUMMARY

Properly utilized, sealants have proven to be a valuable method for preventing caries in the most susceptible areas of the teeth. Twenty years of clinical and laboratory research have demonstrated their safety and effectiveness, and a recent National Institutes of Health Consensus Development Conference has validated the indispensability of this method in preventive dentistry.

Despite the positive performance of sealants in a multitude of clinical trials conducted throughout the world, and despite the greater proportional need for sealants as smooth surface caries in children becomes extinct, the majority of dental practitioners refuse to recognize their effectiveness and to use them for their patients. While the use of sealants among pedodontists is high,[182,183] their use by general dentists remains low.[164,182] The attitude of practitioners toward the use of sealants is epitomized by the results of an American Dental Association Health Foundation survey, conducted in 1982, in which pit and fissure sealants ranked last of fourteen procedures which they believed to be very effective in preventing caries.[166]

A number of reasons have been given by practitioners for not using sealants, including they are not long-lasting, it is possible to seal in decay, and amalgam restorations are preferred.[166] These reasons indicate that they are unaware of the plethora of clinical studies demonstrating sealant effectiveness, and are uneducated about the indications for their use. A sustained, concerted effort is necessary both at the dental school level through continuing education programs in order to reverse a trend that is denying a proven caries-preventive method to patients.

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[1]ADA Council on Dental Materials, Instruments and Equipment: "Pit & Fissure Sealants," *JADA*, Vol. 107, September 1983. [2]*Four year study involving nearly 30,000 children, ages 5-14.* R.W. Johnson Foundation, "The National Preventive Dentistry Program," [3]Sveen, O.B.; Jensen, O: "Clinical Evaluation of Two Pit & Fissure Sealants: Results after 12 months," *New York State Dental Journal*, March, 1984. [4]Sveen, O.B.; Jensen, O: "A 24 Month Evaluation of Pit & Fissure Sealants," Unpublished data. Available on request.

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INSTRUCTIONS FOR CONTRIBUTORS

(Scientific articles)

Previously unpublished articles, critical reviews of material on advances in dentistry and clinical reports are welcomed by the Journal of the Canadian Dental Association for consideration for publication. Material is accepted by the Journal on the understanding it is submitted solely to this publication.

Scientific Articles:

should not exceed 2,500 words with a minimum number of illustrations, diagrams, photographs, tables or graphs. An average of 20 references is acceptable.

Major Reports:

are longer contributions dealing with diagnosis and treatment of dental disease, studies in education, clinical and laboratory research and other detailed investigations pertinent to dentistry and related fields.

Clinical Reports:

are brief (up to 1,500 words) reports, case histories and clinical observations. References should be limited and a minimum number of illustrations used.

Opinions:

fully documented (800 words or less), are welcome for publication at the discretion of the editor.

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Manuscript Requirements:

Submit three (3) copies (original and two copies) to the editor, Journal of the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6. All graphs, photographs, charts and tables must also be submitted in triplicate.

A covering letter and a summary of the submission must accompany each article. Abstracts will be translated into French. The full mailing address of the corresponding author must accompany each manuscript.

The editor reserves the right to edit manuscripts for stylistic consistency, clarity and conciseness. The corresponding author will receive a copy of the edited manuscript for checking prior to publication. Galley proofs will be forwarded to authors but changes other than correction of typographical errors will not be accepted. Authors will be given a 24-hour turnaround time. No exceptions will be made. Authors must list professional degrees, academic/hospital affiliations and appointments and are requested **to submit a photograph** of themselves for publication with the article.

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1. Hechter, F.J. Symmetry and dental arch form of orthodontically treated patients. JCDA 44:173-184, 1978.

For books, give the author's name, book title, location and name of publisher, year of publication:

2. Kilpatrick, H.C. Work simplification in dentistry, ed. 2. Philadelphia, Saunders, 1964.13

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Le texte ci-dessus a été approuvé par nos consultants/courtiers et nos assureurs.

Announcements

MAY/MAI

May 8-11: Nigerian Dental Association's International Dental Conference, Lagos, Nigeria. Contact: Dr. N.O. Salako, School of Dental Sciences, College of Medicine, PMB 12003, Lagos, Nigeria.

May 9-12: 32nd Convention of the Canadian Association of Oral and Maxillofacial Surgeons, Sheraton Centre, Montreal Quebec. Contact: Nichole Du Mouchel Management, 514-282-1418.

May 11-13: Canadian Academy of Periodontology and Ontario Society of Periodontists joint meeting. Clinicians: Drs. Herman Corn, Mick Dragoo, George Zarb; Chairman: Dr. Anthony Melcher. Contact: Dr. Ken Hershenfield, 5 Fairview Mall Dr. Suite 210, Willowdale, Ont. M2J 2Z1.

May 12-15: Ontario Dental Association 118th Annual Spring Meeting, The Sheraton Centre, Toronto, Ontario. Contact: Mrs. Durham, 416-922-3900.

May 12-17: 24th Congress of the Australian Dental Association, Brisbane Australia. Contact: Congress Secretariat, P.O. Box 29, Parkville, Victoria, 3052.

May 24-26: Alberta Dental Association 1985 convention. Jasper Park Lodge, Jasper, Alberta. Contact: The Alberta Dental Association Convention Office, #204 10441-124 St., Edmonton, Alta., T5N 1R7 or call 403-482-5719.

May 26-30: Les Journées Dentaires. Contact: Ordre des dentistes du Québec, 514-875-8511.

JUNE/JUIN

June 1: The Toxic Element Research Foundation is holding a seminar entitled "Academic Profiles in Dental Metal Toxicity", Colorado Springs, Colorado. Contact: Toxic Element Research Foundation, P.O. Box 80, Colorado Springs, Colorado, 80901, 303-473-6324.

June 1: Organization for Nutrition Education is organizing a teleconference on "Nutrition Education – Making Media Connections." Depending on the time zone, conference times will start between 8 am and 12:30 pm. Fee to participate in the conference will be $45. Registration forms can be obtained from: Carolyn Pfortmueller, 7531 Barkerville Court, Richmond, B.C., V7K 1K8, phone 604-294-3775 or 604-274-7321.

June 6-8: Dr. Thomas F. Mulligan, of Phoenix, Arizona presents a three day course in Montreal, Quebec. Dr. Mulligan is the author of the book "Common Sense Mechanics". Co-Sponsored by CEGOO Study Club and IAO Quebec. Contact: Susan Giansante, 514-932-6322.

June 6-8: The 24th annual Congreso Nacional y 4th Congreso Internacional de odontologia y estomatologia, Seville, Spain. Contact: Andaluza de Congresos, S.A. Avda, San Francisco Javier s/n Edificio Sevilla, 2 SS, 41005, Seville.

June 12-14: National Conference on Long Term Care, sponsored by the Canadian Long Term Care Association, Hotel Hilton, Quebec City. Contact: Canadian Long Term Care Association, 613-237-9837.

June 12-16: Saskabash. Western Canada Dental Society Convention, Saskatoon, Saskatchewan. Contact: Dr. Keith Hamilton 306-374-7272.

June 16-20: The 4th International Congress of Auxology, Université de Montréal, Montréal, Quebec. Contact: Micheline Brault Dubuc, General Secretary, International Congress of Auxology, Université de Montréal, CP 6128, Succursale A, Montréal, Qué. H3C 3J7.

June 20-23: The World Symposium on Occlusion and the Temporomandibular Joint, London, England, in the Kensington Town Hall Conference Centre. Contact: Conference Clearway Ltd. Conference House, 9 Pavilion Parade, Brighton, Sussex, BN2 1RA United Kingdom.

June 21-23: Florida National Dental Congress, Buena Vista Palace, Lake Buena Vista, Orlando, Florida. Contact: Florida Dental Association, 3021 Swann Avenue, Tampa, Florida, 33609.

June 22-29: Yukon Dental Association, Summer Convention '85, Kluane National Park, Contact: Dr. John Stern, 3089 3rd Ave., Whitehorse, Yukon, Y1A 5B3.

June 23-26: Canada Safety Council 17th Annual Conference, St. John's Newfoundland. Contact: The Canada Safety Council, 1765 St. Laurent Blvd., Ottawa, Ontario, K1G 3V4, 613-521-6881.

June 24–July 19: American Dental Professionals for Israel announces its annual "Summer Program in Israel '85" for dental students. Contact: 515 Park Avenue, New York, New York, 10022 or 212-486-4266 for details.

June 25-28: The 50th Annual meeting of the Pacific Coast Society of Prosthodontists, Westin Bayshore Hotel, Vancouver, B.C. Contact: Dr. David Eggleston, 1441 Avocado Suite 508, Newport Beach, California, 714-640-5680.

June 27-28: "Oral Care of the Institutionalized Patient" by the University of Washington, Continuing Dental Education Dept., co-sponsored by Dental Care for the Disabled, and the Academy of Dentistry for the Handicapped. Seattle, Washington. Contact: Continuing Education, SC-62, University of Washington, Seattle, Washington, 98195, 206-543-5448.

JULY/JUILLET

July 3-5: Bermuda Dental Association 1985 Convention. Guest speakers include Dr. Ron Jordan from the University of Western Ontario. Contact: Dr. Robert Gibbons, Erin, Paget 6-20, Bermuda, 809-296-4477.

July 8-9: National Conference on the Delivery of Periodontal Health Care, Hillenbrand Auditorium, American Dental Association Building, 211 E. Chicago Ave, Chicago, Ill. USA. Contact: American Academy of Periodontology, Room 924, 211 E. Chicago Ave., Chicago, Ill. 60611.

AUGUST/AOÛT

August 1-21: American Dental Professionals for Israel's annual Summer Program in Israel '85'' for dental students. Contact: American Dental Professionals for Israel, 212-486-4266, or write 515 Park Ave., New York, New York, 10022.

August 4-9: Dental Volunteers for Israel, International Symposium, Jerusalem, Israel. Topic: Today's Prevention for Tomorrow's Dentistry. Contact: Kenness International, 1 Park Ave., New York, New York. 10016, 212-684-2010 or Dr. M. Florence, 416-925-8933.

SEPTEMBER/SEPTEMBRE

September 12-14: 37th Annual New Orleans Dental Conference, New Orleans Hilton and Towers, New Orleans Louisiana. Conference theme is ''The Magic of Fine Dentistry.'' Contact: The Conference Office, 3101 West Esplanade Avenue, Suite 119, Metairie, LA. 7001, 504-834-6449 for information.

September 18-21: 4th International Dental Congress on Modern Pain Control. Bologna, Italy, Pallazzo dei Congressi. Contact: Masson Italia Congressi, Via Baldissera, 4-20129, Milan, Italy.

September 20-27: Annual meeting of the Canadian Society of Forensic Science jointly with the **Society of Forensic Toxicologists** and the **American Society of Questioned Document Examiners**, Hyatt Regency Hotel, Montreal, Quebec. Contact: Executive Secretary, Canadian Society of Forensic Science, 2660 Southvale Cres., Suite 215, Ottawa, Ont., K1B 4W5, 613-731-2096.

September 21-27: 1985 Congress of the Federation Dentaire Internationale is being held in Belgrade, Yugoslavia.

September 27-29: Canadian Academy of Endodontics annual meeting, Ottawa Ontario, Four Seasons Hotel, Contact: Dr. Lorne Chapnick, 2200 Yonge St., Suite 1009, Toronto, Ont. M4S 2C6.

September 27-29: Fifth International Dental Electrosurgery Conference-Workshop, Grand Island Holiday Inn, Niagara Falls, New York. Contact: Dr. M.J. Oringer, Academy Executive Secretary, P.O. Box 205, Thousand Island Park, New York, 315-482-9592.

September 29–October 1: Annual Meeting of the Association of Prosthodontists of Canada, Four Seasons Hotel, Ottawa, Ontario. Contact: Dr. Donald Kramer, 506-700 Bay Street, Toronto, Ontario, M5G 1E2.

September 29–October 2: Canadian Dental Association national convention. Ottawa, Ontario, at Canada's Capital Congress Centre. Contact: Canadian Dental Association, 1815 Alta Vista Dr., Ottawa, Ont. K1G 3Y6.

OCTOBER/OCTOBRE

October: Golf at Gleneagles, Atlantic Dental Seminars, Gleneagles Scotland, ''Comprehensive Adult Dentistry''. Contact: Course Director (North America) 1545 Birmingham St., Halifax, N.S., B3J 2J6.

October 8-12: Austrian Dental Congress, Graz, Styria, Austria. Contact: Styrian Dental Surgeons and Dentists Association, Univ.-Zahnklinik, A-8036, Graz -LKH, Austria.

October 13-18: 6th Congress of the International Society for Laser Surgery and Medicine. Organized by the Israel Society for Laser Surgery and Medicine. Jerusalem, Israel. Contact: DIT Travel/Convention Division, 1183 Finch Avenue West, Suite 203, Downsview, Ontario M3J 2G2, Attention: Rifka Boruchowicz, Convention Secretariat, phone 416-663-9100/07.

October 30: The first national and international scientific encounter of the dental schools, during the XVIII National and International Congress of the Mexican Dental Association. Contact: Admgen Ezequiel, Montes 92, Mexico, D.F., 06030 Mexico 915-566-61-33.

NOVEMBER/NOVEMBRE

November 2-5: 126th Annual Session of the American Dental Association, San Francisco California. Contact: The American Dental Association, 211 East Chicago Ave., Chicago Ill., 60611 U.S.A.

November 7-9: First International Beijing (Peking) Symposium in Dentistry and First International Dental Trade Show. Inaugural theme will be dental materials and their clinical use. Contact: Quintessence Publishing Co. Inc., 8 S. Michigan Ave., Suite 2301, Chicago ILL. 60603, U.S.A. Telephone (800) 621-0387.

November 18-21: American Dental Association, Foods Nutrition and Dental Health Program in co-operation with the University of Texas, Health Science Centre at San Antonio, Dental School, announces a scientific **consensus conference on Methods for Assessment of the Cariogenic Potential of Foods**, University of Texas Health Sciences Centre, San Antonio, Texas. Contact: Dr. Dominick DePaola, Chairman, 7703 Floyd Curl Drive, San Antonio, Texas, 78284, 512-691-6601.

November 22-23: The Professional Development Committee of the Ontario Dental Association will present a symposium on Periodontics in Toronto. Contact: Dr. Jeffrey Goodman, Director of Professional Development, 416-922-3900.

November 28: 1985 Toronto Academy of Dentistry Winter Clinic, Metropolitan Toronto Convention Centre. Contact: Toronto Academy of Dentistry, 234 St. George St., Toronto, Ont. M5R 2P2, 416-967-5649.

November 30: American Academy of Dental Electrosurgery annual meeting. New York Hilton Hotel. Contact: American Academy of Dental Electrosurgery, 57 West 57th St., Suite 1001, New York, New York, 10019, 212-755-6630.

1986+

January 30–February 2, 1986: HealthCom '86, Las Vegas, Nevada, Las Vegas Convention Centre. Highlights computer, telecommunications and information systems specifically for the healthcare industry. Contact: Lin Fish/Pete Soraparu, Fleishman Communications Inc. 312-397-7744.

July 1, 1986: Applications are being accepted for the **Postdoctoral program, Dental Diagnostic Science at the University of Texas**, Health Science Center at San Antonio for the class beginning **July 1, 1986**. Address inquiries to: Office of the Associate Dean for Advanced Education, The Dental School, The University of Texas Health Science Centre at San Antonio, 7703 Floyd Curl Dr., San Antonio TX. 78284.

September 9-12, 1986: International Association of Oral Pathologists in association with the British Society for Oral Pathology – Biennial Congress, Edinburgh, Scotland. Contact: Dr. J.C. Southma, Department of Oral Medicine and Oral Pathology, University of Edinburgh, Chambers St., Edinburgh, Scotland, EH1 1JA.

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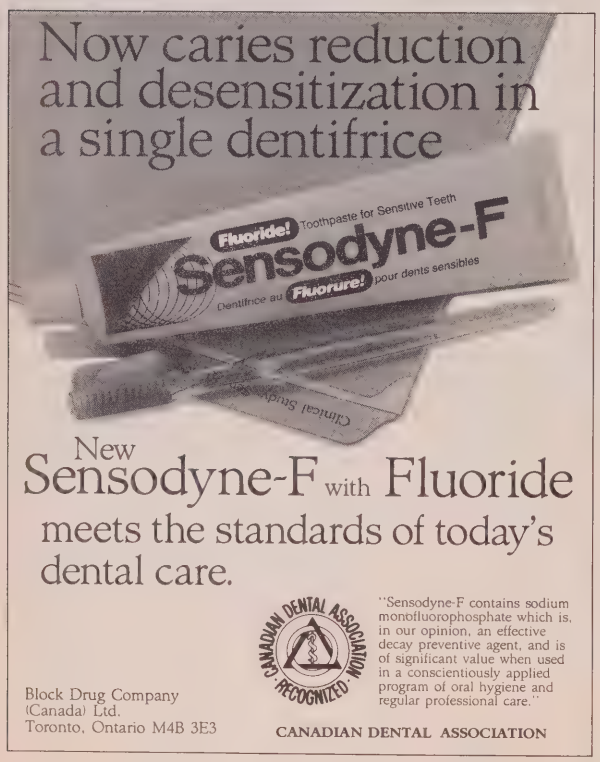

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2. ROSS, N.M., et al.: Warner-Lambert research report #955-0875 (1976).
3. YANKELL, S.L., et al.: Warner-Lambert research report #955-0893 (1976).
4. LAMSTER, I., et al.: Clin. Prev. Dent., 6:12 (1983).

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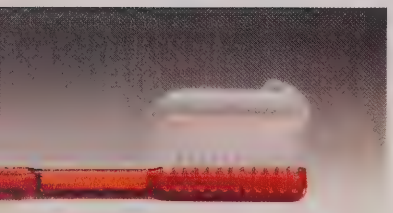

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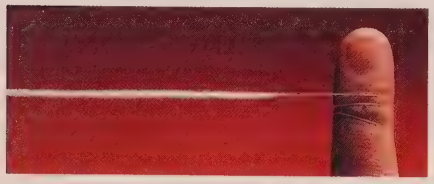

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References: 1. Ostrom, C.A. et al., J Dent Res, 56(3):212-221, 1977. 2. Arends, J., ten Cate, J.M., J Cryst Gro, 53:135-147, 1981. 3. Silverstone, L.M., Caries Res, 11 (Suppl. 1):59-84, 1977. 4. Data on file at Procter & Gamble, Inc. 5. Mobley, M.J., J Dent Res, 60(12):1943-1948, 1981. For further information, please contact Crest Professional Services, P.O. Box 355, Station A, Toronto, Ontario M5W 1C5

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Cover Illustration – Dr. Jim O'Brien of Weston, Ontario, believes his woodcarving hobby has definite therapeutic value as a stressbreaker for dentists. One of this master-pieces, which he says can in part be fashioned through the use of dental instruments, is seen on this month's cover.

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SELF IMPOSED STRESS?

I am the Dr. Ennis who had the nerve to write to a major Canadian newspaper in response to an article and admit that perhaps it wasn't really the stress of dentistry that was affecting it's practitioners but rather their own internal stress was being interpersonalized on the profession itself. It was me who dared say it, and I still believe it to be true.

We have always been taught that our profession is unique, in that it is one of the most stressful. It was taught in school, the media at least once a year will run an article on the topic, and it has been passed on as our heritage on to new graduates joining the ranks. The danger to all this is that it would appear lately most dentists are starting to believe it. It is for lack of anything a very easy out.

"Sorry, today didn't go well because I'm stressed."
"Oh really and why is that? Worried about the threat of nuclear war or the situation in Ethiopia?"
"No it's not that, It's just that I forgot to mention, I'm a dentist."
"Oh I'm sorry, I should have realized, everything stresses you."

We've become a profession that has for the most part collectively withdrawn into ourselves and over the years alienated ourselves from society around us. The real crime is that too many are starting to alineate themselves from themselves. This withdrawing in and looking out at the world around is very dangerous and produces very fragile psyches that are easily broken. Easily broken, because someone might be opening an office up the street, or a Tridont's coming into the area, or perhaps a colleague just bought a bigger house or new European sports car. I'll never forget when I opened the first of two 'low cost' dental clinics, how most of my colleagues avoided me like a leper. When they heard that the clinics were financially (as one would expect) a bust, they were all too happy to talk about it. They were very quick to point out that opening such things in very depressed areas was really a stupid business move. They missed the point of why they were opened. They are missing the point of why we are out, treating the public to begin with. The stress we have been so quick to embrace as a method of practice and life, is starting to seriously damage our credibility.

This all becomes a dangerous way to live. It produces a person who is basically not happy. It is a shame to have spent so much time learning a career, only to end up dissatisfied with it. Is it because the career was no good to begin with, or just that unrealistic expectations were never met. I never recall any professor in school promising we'd all have big, splashy offices in suburban shopping malls, or live in large fashionable houses in very prestigious areas of the city. I do however recall mention of a job well done and the inherent satisfaction in something like that. Maybe the definition of a job well done has changed, because society has.

Society has indeed changed and as a part of it we naturally change with it. We live in a fast moving, materialistic world where success is not merely equated with a job well done. Young professionals from all areas face this dilemma. Is this justification for all young professionals to just go with it and no longer question their role in society and how to perhaps better it. Is it wise to merely go with the flow, be stressed, never consider a job well done, simply because that's the way it is. As human beings, we possess a dynamic ability to constantly change and develop. I think the time for a change has come. it would be very healthy to introspect for a moment and seriously question our role as so-called professionals.

If we are genuinely concerned with our role in society than we collectively have the power to redefine it. When we individually relearn a job well done, it will be very easy to come together as a group to reestablish ourselves in society. We no longer would be considered a bunch of highly stressed neurotic professionals, but rather highly motivated individuals who have focused on the possible negatives of their careers and utilize these to perform with satisfaction and pride.

Alan Neil Ennis, DDS
Toronto, Ont.

Editor's note: Dr. Ennis has applied to complete his Master of Education degree in applied psychology at the University of Toronto, Graduate Studies, in the fall of this year.

News Update

REPORT INDICATES TOO MANY MDs

A report requested by provincial deputy ministers of health, advises that Canada's medical schools are graduating too many medical doctors and must cut enrolments immediately or face a surplus of about 6,000 physicians by the end of this century. An excess of more than 300 physicians are entering the Canadian health care system each year, the report claims.

Further statistics in the volume revealed that while the population of Canada had increased by 33 per cent between 1961 and 1980, the supply of physicians (excluding interns, residents and military physicians) more than doubled in that period — to 37,700 from 18,300. If this trend continues, the country will have a physician population of 57,000 by the end of the century, but will actually need fewer than 51,000.

The report indicates that the biggest portion of this surplus is in the family practitioner category. There are 4,870 more than necessary, it states.

There is also a warning that the figures and estimates are "conservative" and the report recommends drastic reductions in postgraduate study fields and a cut in the number of immigrant medical personnel allowed into Canada.

CMA defends enrolments

Dr. John Bennett, director of professionale affairs for the Canadian Medical Association, defends the current level of medical school enrolments, because, he says, they comply with predictions made just five years ago by a federal task force.

The report states that first-year admissions into medical schools should be reduced by 20 per cent, effective this fall. It also recommends that post-graduate training be reduced by 20 cent in general practice, by 1991 and in medical specialty areas by 1994.

Regarding the number of foreign medical school graduates allowed into Canada annually, the report urges that immigration authorities reduce this figure to 115 from the present level of 176, by the year 1990.

DR. C.W.B. McPHAIL DIES IN VICTORIA, B.C.

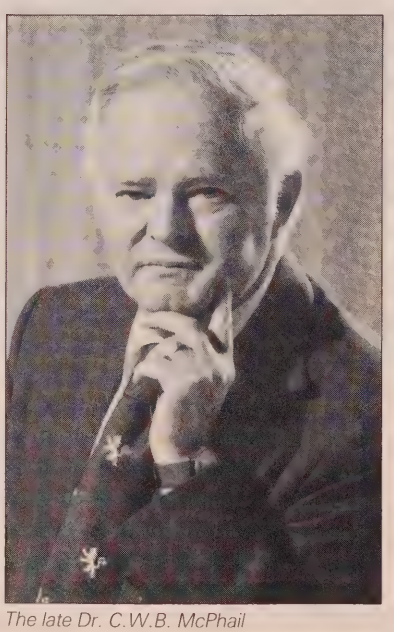
One of the most prominent members of Western Canada's dental community, Dr. C.W.B. (Bill) McPhail, died in Victoria, British Columbia, after a lengthy illness.

Dr. McPhail received his BSc and DDS degrees from the University of Alberta, graduating in 1942. Immediately following graduation, he entered the Canadian armed forces and served until 1946.

When he was discharged, he conducted a private practice in B.C. for several years, until he entered the B.C. Public Health Service, in 1952.

Dr. McPhail went to Chicago for specialty training and was graduated from Northwestern University there in 1954, with an MSD degree.

He was appointed Provincial Director of Dental Health Services in Alberta in 1959. He later joined the Faculty of Dentistry of the University of Alberta as Head of the Department of Public Health and Preventive Dentistry. He was appointed Assistant Dean of the Faculty in 1963.



The late Dr. C.W.B. McPhail

Saskatchewan then benefitted from his scholarship and leadership. In 1967, Dr. McPhail became the first department head of Social and Preventive Dentistry at the University of Saskatchewan. From 1973 to 1975, he was Acting Dean of the College of Dentistry, University of Saskatchewan, and Dean, from 1975 to 1977. He continued to teach until his retirement in 1982.

DR. ROBERT DORION NAMED PRESIDENT OF U.S. BOARD

Dr. Robert B.J. Dorion of Montréal has been elected President of the American Board of Forensic Odontology at a board meeting held in Colorado Springs.

Dr. Dorion, who will assume the office on July 1, is the first Canadian president of that body and one of Canada's pioneer forensic dentists.

He is a staff member of the Faculty of Dentistry, McGill University, the University of Laval and the University of Montréal. He has been Director of Forensic Dentistry at the Laboratoire de médecine légale, Ministry of Justice of the Province of Québec, since 1973.

His previous appointments include those of consultant to the Law Reform Commission of Canada, President of the Canadian Society of Forensic Science and lecturer at the Canadian Police College in Ottawa.

Dr. Dorion has lectured extensively on the subject throughout North America, has published some 40 articles in various scientific journals and is a leading researcher in the field. The latter has led to appointments as specialty contributor to the Journal of the Canadian Dental Association and as a member of the Editorial Board of the Journal of the Canadian Society of Forensic Science.

A graduate of St. Francis Xavier University and McGill University, he maintains a private practice in Montréal and has been recognized by the courts as a specialist in his field in cases dealing with civil and criminal litigation.

One of Dr. Dorion's responsibilities this year will be to head the Board's 10th anniversary celebration.

CONVENTION '85
Ottawa — A Capital Place to Learn

The Scientific Committee believes that the Convention should present a variety of interesting topics. This theme is reflected by the presentations on the second day of the scientific program.

Tuesday, October 1
Morning session — 9 a.m. to 12 noon

The third scientific session will offer discussions on Restorative Dentistry and Periodontics.

The Aesthetic Approach to Restorative Dentistry

Dr. R.E. Goldstein — co-founder of the American Academy of Aesthetic Dentistry and author of "Esthetics in Dentistry", will present a comprehensive all-day discussion on aesthetic dentistry which will include the concepts, principles and problems associated with this discipline.

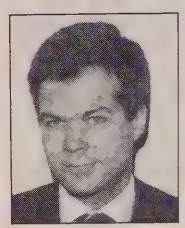
Panel Discussion on Internal Medicine

This presentation will be of interest to spouses and dentists, because it will focus on recent developments in common diseases.

Dr. W.L. Williams — Cardiologist, Ottawa Civic Hospital — will present current concepts on the etiology and treatment of cardiac disease.

Dr. C.E. Danjoux — Radiation Oncologist — Ottawa Civic Hospital — will comment on the causes and treatment of cancer.

Dr. A.L. Weinberg — Internist — Ottawa Civic Hospital — will present an update on diabetes mellitis, rheumatoid arthritis and blood diseases.



Periodontal Therapy in the 1990s

Dr. C.A. McCulloch — post-doctoral fellow, Department of Anatomy, University of Toronto, will discuss current limitations of periodontal disease and how these could be affected by present and future research.

Tuesday, October 1
Afternoon Session 2 to 5 p.m.

The Aesthetic Approach to Restorative Dentistry

Dr. Goldstein will continue his presentation on this topic

Oral Medicine and Pathology

Dr. J.J. Pindborg — Internationally renowned oral pathologist, will illustrate problems of clinical differential diagnosis based upon colour and surface changes of the oral mucosa.

Prosthetic Dentistry

Dr. A.S.T. Franks — Consultant in Prosthetics and Fellow, Royal Society of Medicine (U.K.), will discuss how increased life spans affect denture design, and the provision of prosthetic appliances for elderly edentulous patients.

Next months' Journal will outline the clinicians who will be featured in the final day of the Convention.

J. Hardie, BDS, MSc, FRCD(C)
Convention '85 Scientific Chairman

WHITE WATER RAFTING EXPERIENCE SCHEDULED

A somewhat different, and exciting experience, is available to CDA Convention '85 registrants, spouses and auxiliaries on Saturday and Sunday, September 28 and 29.

A white water rafting adventure has been arranged by the Canadian Dental Hygienists' Association. Professional guides will lead those who enjoy something unlike most convention social activity, through the swirling white water of the mighty Ottawa River about one hour northwest of the Nation's Capital.

Passengers will enjoy the thrilling ride in paddle rafts similar to those used in the Grand Canyon of Colorado.

For those who wish to enjoy the excursion, there will be chartered bus service from the door of the Chateau Laurier Hotel to the embarkation point. Participants can enjoy a lunch on the river bank and a beverage on the return bus trip.

All safety gear – life jackets, helmets and wetsuits are provided at the site.

The cost of the adventure is $75 per person. (It is also noted that any children must be at least 12 years of age and weigh 90 pounds.)

Schedule

There will be two morning departures on Sept. 28 and 29. On those occasions the bus will leave the Chateau Laurier Hotel at 7.30 a.m. and return between 4 and 5 p.m. in the afternoon.

On Saturday, Sept. 28 there will also be an afternoon trip, with departure time of 12.30 p.m. (noon hour). The bus will arrive back at the hotel at 9 p.m.

Applications

Those interested are requested to send their application with a cheque or money order to:

Ms. Sandra Lee, 57 Spruce St., Ottawa, Ont. K1R 6N8.

Applications should be received by September 1, next, to guarantee placement.

Cheques should be made payable to: CDHA (Convention '85).

On your application, please inform the organizers of your full name and address, the number of people in your party, your telephone number, the day and time preferred and the amount of the cheque or money order enclosed.

RECOMMENDATIONS OF AN "AD HOC" COMMITTEE ON GERIATRIC DENTISTRY

ORDER OF DENTISTS OF QUEBEC

The Committee's mandate was to evaluate the present and future impact of the aging of the Quebec population on the practice of Dentistry as well as the needs for additional training which would allow the province's dentists to face the new demands in dental care.

The dental profession has a social responsibility to face with the same concern for efficacy, the dental needs of the third age patients as well as the young and adult patients. Given the progressive increase of patients in the third age, the Order of Dentists of Quebec has mandated an "Ad Hoc" Committee, the recommendations of which, would allow the establishment of a true policy on Dental health care in which all age groups would be included.

The Committee thus proceeded with reviewing the literature, meeting with specialists in Geriatrics and the Minister of Social Affairs, and with University staff members, dentists, also hospital and elderly care centre authorities, holding consultation by questionnaires with the Quebec dental professionals and finally with the dental students of the three Dental Schools of Quebec and a group of elderly. The findings of this exhaustive study have generated conclusions and recommendations which are included in an impressive report submitted to the Order of Dentists at the end of 1984.

Recommendations

1. Teaching

1 The immediate appointment of a coordinator for the teaching of Geriatric Dentistry in each of the Faculties of Dental Medicine in the province;
2 the establishment, as soon as possible, of a multidisciplinary course directly related to Geriatric Dentistry during the first cycle of the program of the Faculties of Dental Medicine;
3 the establishment of multidisciplinary residencies in the fields of Geriatric Dentistry, in Montreal and Quebec, under the responsibility of the Faculties of Dental Medicine.

2. Continued Education

1 That the Faculties of Dental Medicine provide courses, conferences, etc. on the subject of Geriatric Dentistry for all interested dentists;
2 that the future educational campaigns of the Order include a segment on dental care for the aged;
3 that the future programs of the CDA-ODQ Conventions include more conferences on all the aspects of Geriatric Dentistry;
4 that the dental associations give more and more information to their members about this aspect of dentistry.

3. The Promoting of Health

1 That the Order of Dentists of Quebec choose Geriatric Dentistry as a subject of one of their future corporate advertising campaigns;
2 that the Order of Dentists of Quebec invite all members to offer free case finding exams to the aged, to incite them to visit their dentist;
3 that arrangements be concluded with the Faculties of Dental Medicine in order to facilitate such case finding programs, with full participation of students;
4 that the Order of Dentists insist upon the urgent need for dental hygienists to promote information and a consciousness toward the benefits of dental health to the aged, whether at home or in an institution, when meeting next with the Ministry of Social Affairs and the Corporation of Dental Hygienists;
5 that the Dental profession involve itself more in meetings with elderly groups in order to promote their dental health and to keep in closer contact with them;
6 that the dentists insist upon being part of the administrative Committees of the "CRSSS", "CLSC", etc. where decisions are made, since dental care for the aged most often requires multidisciplinary interventions for the patient;
7 that the dental profession sensitizes its colleagues in Geriatric Medicine to the problems of Oral Health for the aged in order to come to terms with the differences in therapeutics if any exist.

4. The Institutionalized Elderly

1 That means be brought about with the department of Social Affairs to foresee that:
a) each applicant be offered a dental examination upon entry and given annual follow-ups;
b) each institution have access to at least a consulting dentist to respond to needs;
2 that regional pilot projects be put forward in order to investigate the real needs of the elderly in institutions and to suggest proper services to be offered in said establishments;
3 that a long term project be for the Order of Dentists to stress to the department of Social Affairs the need to provide for 200 well equipped clinical beds in the institutions;
4 that a short term project be for the creation of well suited dental mobile units in order to be of immediate service to a number of Centres in the same region.

5. Architectural and Financial Barriers

1 That dentists provide greater access to their clinics by eliminating architectural barriers;
2 that dentists revise fees as to make them more acceptable to this particular clientele as a great majority of elderly have of low incomes;
3 that, dentists on call in the institutions be able to count easily on additional free help of fellow professionals to accelerate case finding and subsequent treatment;
4 that long term care institutions be given power to contract for services with private dental practices;
5 that the Order of Dentists of Quebec work closely with the "ACDQ" and envisage the possibility of including certain treatments to the elderly (examination, prophylaxis, etc.) in the "R.A.M.Q." paid services.

6. Professional Association

1 That the Order of Dentists of Quebec favor the implementation of a Quebec Association of Geriatric Dentistry to centralize all the efforts made by those interested in this field

which is the wish of a majority in the dental profession;
2 that this association promote research on the particular dental health problems of the aged and their effects on nutrition, digestion, etc.
3 Following all these aspects of Geriatric Dentistry that, the Order of Dentists of Quebec keep on promoting studies and remain ahead of any possible intervention towards our third age patients.

Editor's Note: The Journal is indebted to Dr. Pierre Desautels, Université de Montréal for his help in preparing this article.

ADA ANNOUNCES AWARDS FOR GERIATRIC, PREVENTIVE AND PERIODONTAL PROJECTS

The American Dental Association will present awards for those individuals or organizations who have improved the oral health care of the elderly through innovative research and community health care delivery projects, and in periodontics to those who have contributed new methods for improving prevention and treatment of periodontal disease, or to a greater public awareness of periodontal health needs.

An award is also presented in Community Preventive Dentistry. This one is available only for community preventive dentistry programs. Preventive dentistry includes oral hygiene instruction, plaque control and uses of fluorides and sealants, as well as relevant patient motivation and nutrition education. Appropriate community programs include school programs, programs for special population groups, media public information programs and private practitioners' community education activities.

The deadline for applications is August 15, 1985.

For the ADA Geriatric Dental Health Care Award, made possible through a grant from the Warner-Lambert Company, the deadline for submissions is July 15. The deadline for the Periodontal Health Award is August 1, 1985. The latter award is made possible through a grant from the Procter & Gamble Company.

Applications from Canadian dental professionals are eligible for all of the awards.

Geriatric submission categories

There are two main categories for the Geriatric Award submissions – Health Care Delivery Projects, which is delivery of oral health care for older adults through the use of unique equipment, settings or innovative modes of delivery, and – Research, in the form of applied research, epidemiological or clinical studies that utilize techniques, methods or materials that contribute greater knowledge to the field of geriatric dentistry.

Entries will be evaluated on:
- documented effectiveness
- scientific credibility/accuracy
- originality and creativity
- potential number of persons served
- program in a special area of concern which may otherwise receive little attention.

The judging will be done by the ADA Council on Dental Health and Health Planning, its consultants, and staff.

Award winners will be announced in the fall, following judging. Presentation of the $2,000 award will be made at the ADA's annual convention. Awards of $300 may be granted for other meritorious entries.

Entry rules

1. Any project which furthers the understanding, diagnosis, prevention and/or treatment of dental caries, periodontal disease, denture stomatitis, or other oral diseases in the aged population, is eligible.
2. Eligibility is not limited to dental personnel. Any individual or organization responsible for creating and implementing a project concerned with geriatric oral health, may submit an entry.
3. All entries must be accompanied by a signed application. All entries must be acknowledged on the application by a state (provincial) or local dental society, a dental school or provincial dental director. The acknowledgement should not be made by the individual submitting the entry.
4. All entries must be postmarked no later than July 15, 1985.
5. All entries must be accompanied by an outline, including a description of the entry's contents, and a summary of the program.

In addition, entries may include any documentation necessary to illustrate the program to the judges, with the following limitations:

– audiovisuals must be limited to those specified in guidelines listed on the entry form. Audiovisuals must be accompanied by a typed outline and/or a transcript of their contents.

– Job descriptions and "past records" of individuals should not be submitted.

6. Entries will not be returned, except for audiovisuals.
7. No entry that duplicates an applicant's previous entry, will be accepted.

Entry applications will be provided by writing to:

ADA Geriatric Dental Health Care Award,
Council on Dental Health and Health Planning,
211 East Chicago Avenue,
Chicago, ILL 60611, U.S.A.

Community Preventive Dentistry Award

This award has been established by the American Dental Association in conjunction with the Johnson & Johnson Health Care Division to recognize and reward those individuals and organizations who have created and/or implemented significant preventive dentistry programs.

There will be a $2,000 award, presented to the first place winner. Awards of $300 may be granted for other meritorious entries.

Awards winners will be announced in the fall following the judging. Presentation of the highest award will be made at the annual session of the ADA.

Basic criteria are similar to those for the Geriatric Award.

Entries must be submitted by August 15.

For entry applications, write to:

ADA Community Preventive Dentistry Award,
Council on Dental Health and Health Planning,
211 East Chicago Avenue,
Chicago, ILL, U.S.A. 60611.

Periodontal Health Award

Criteria for the Periodontal Health Award are essentially the same as those for the Geriatric Dental Health Care Award.

There will be a $2,000 first prize. Awards of $300 may be granted for other meritorious entries.

Judging will be conducted by the ADA Council on Dental Health and Health Planning, its consultants and staff. Judges' decisions will be final.

The award winners will be announced in the summer following the judging. Presentation of the $2,000 award will be made at the ADA annual session.

Entry rules

1. Any program that can result in improved periodontal health is eligible. This may be a program that increases awareness by the public of the condition, and thereby leads individuals to seek preventive measures, diagnosis or treatment. It may be a novel program or technique in the dental office that facilitates periodontal disease prevention or treatment. This award program is not intended for evaluation of materials, instruments, or therapeutic agents. Basic scientific breakthroughs in understanding periodontal disease are recognized and honored by the dental research community. This award is to focus attention on procedures and means by which the public awareness of periodontal disease may be heightened and the effectiveness of prevention and treatment is enhanced.
2. Eligibility is not limited to dental person-

nel. Any individual or organization responsible for creating and implementing a program concerned with some aspect of periodontal health, may submit an entry.

Examples of entries

A few examples of the nature of the entries that will be considered, follow:

- Public service advertising
- Poster campaigns
- School programs
- Patient education programs
- Prophylactic procedures
- Oral hygiene aids
- Audiovisual aids for instruction in the dental office

Address for applications

For entry applications, apply to:
ADA Periodontal Health Award,
Council on Dental Health and
Health Planning,
211 East Chicago Avenue,
Chicago, ILL 60611, U.S.A.

73rd FDI CONGRESS Yugoslavia – the country of tourism

The 73rd annual World Dental Congress of the Federation Dentaire International will be held in Belgrade, Yugoslavia, September 21-27, 1985.

In recent years, many areas of this country have become popular tourist meccas for travellers from other parts of Europe and from North America.

Professor M. Marković, an official of the Congress organizing group, has written an article for the Journal describing the attractions of the host country. His text follows.

Writing of Yugoslavia as a country of tourism, is writing of an intricately indented Adriatic coast, skirted by a thousand islands, great ranges of lofty mountains, tawny plains watered by meandering rivers – all these descriptions fit the Yugoslav geographical mosaic. For most holidaymakers Yugoslavia is synonymous with the shores of the Adriatic, yet three quarters of the country are mountainous and abound in unexpected lakes and waterfalls, underground caverns (more than 10,000 of them), great rivers (1,900 of them), gentle forested hills dotted with pastures and beyond the mountain barriers, broad plains stretching to the horizon. There are soft rich highlands, Alpine lakes (like Lake Bled) cascading lakes set in a magnificent forest, like Plitvice Lakes National Park, a unique rugged limestone Karst and the most beautiful gorges in Europe (like the Tara canyon). Scenic contrasts on a grand scale!

There are excellent holiday facilities from winter sports (the Winter Olympics 1984 were held in Sarajevo, the geographical centre of Yugoslavia) to swimming and sunbathing. Yugoslavia possesses facilities for either the leisurely or active holiday, and in addition the cities and towns are colourful, and the resorts, coastal and inland, are very good. Some tourists may wish to luxuriate in places with good hotels. In building hotels, Yugoslavs have avoided the now so common concrete scarecrows – the majority blend with the nature, and purvey first class food and wine. Among them there are Dubrovnik in southern Dalmatia, Lake Bled in Slovenia and Opatija in Istria, to mention only three examples. For the skiers in the winter and the trekker in the summer there are the Slovenian Alps, the Bosnian mountains around Sarajevo, the Durmitor ranges of Montenegro, the Sar Planina of Southern Serbia and Macedonia. Swimming is good along the entire Dalmatian coast, at Lake Ohrid in Macedonia, and in the Bosnian and Slovenian lakes and rivers with their swift flowing mountain streams. Forests are filled with game for excellent hunting and rivers perfect for fishing.

One can find the magnificent examples of autochtonous art and architecture from ancient Bogomil necropolises to medieval monasteries and modern monuments dedicated to the liberation. One can find it also in the way the spirit has influenced the monuments left behind by Venetians in Dalmatia, by the Turks in Bosnia and Herzegovina, and by Austrians and Hungarians such as in the lovely architecture of the palaces and churches of Dalmatia in the Renaissance style, in some elegant Gothic architecture in Croatia, and Baroque in Slovenia, especially in Ljubljana; and in the slim graceful minarets and magnificent mosques at Mostar, Sarajevo and Skopje.

The country is different from any other to which we have access. Any land has its own internal contrast – Perpignan is not like Paris, the central Hebrides are far removed from London, so is Honolulu from New York. But one can doubt whether anywhere else in the world you can move within a few hours from say, the cosmopolitan streets of Belgrade or the sophisticated street of Zagreb to the unbelievable oriental scenes in the moslem villages of Bosnia.

The Bled Lake

Yugoslavia is also a country of festivals during the summer. In the larger resorts and cities, there are frequent music and drama festivals like the now world renown Dubrovnik Festival, and film festivals like the one held in the vast Roman amphitheatre at Pula. There are ballet, opera, orchestral and theatrical performances and constant folklore shows even in the smallest resorts.

Many interesting and colourful customs exist in Yugoslavia. Many towns and villages have their own facilities connected with some local events. And everywhere there are legends, songs and folk ballads. Magnificent national costumes enable an expert to tell at a glance the town or village whence a person comes. Associated with the beautiful costumes are the spirited national dances of Yugoslavia. These dances are gay, vigorous, sad, or native, depending whence they come and their theme.

As for other entertainments they are not sophisticated in the western sense, but they are intimate and spontaneous. For the price of a few cups of coffee Turkish or expresso, or glass of wine, a charming evening can be had to the accompaniment of a gypsy, national or upbeat orchestra.

For the tourists who wish to buy some mementos of the colourful folk arts of Yugoslavia there are beautiful handcraftshops in the cities, resorts and towns, even in some hotels. It is possible to buy entire costumes, delicately made coffee sets, wonderful woodwork, embroidered blouses and jackets and fine silver filigree work. In addition one can buy many national musical instruments, magnificent leather work and, of course, a wide variety of beautifully made souvenirs such as cigarette cases, wallets, table mats, exquisite lacework, ash trays, pottery and a host of similar things.

In an article of this length one can obviously do no more than sketch out the foundations of the country and mention only some of the hundred-and-one points which would interest the traveller.

Entry into Yugoslavia is easy. Of course tourists need a valid passport, and citizens of a few countries which have not signed with Yugoslavia a convention abolishing visas, also require an entry visa. Wherever the visitor goes he is assured of complete freedom of movement, courtesy and the warm hospitality of people.

PRESIDENT'S COLUMN

by Dr. Ralph Crawford

MAN'S WORTH

On April 1, CDA's National Dental Health Month and the two-year Dental Awareness Program were launched in Ottawa, complete with a national press conference. CDA was fortunate to have national news coverage for this event, and it started a flurry of media interviews for the President. On several occasions, as to be expected, there were questions pertaining to dental fees and dentists' incomes (usually excessive in the mind of the interviewer!) It wasn't unusual for the interviewer to quote a Statistics Canada figure indicating dentists earn "X" amount of income and are second, third or fourth (I can never remember), of the "high income" professionals. Or else, I am told that a filling costs $41 and "Isn't that rather high?"

If allowed, and time often doesn't allow, I attempt to answer the income/fee question with sincerity and honesty – always prefacing my remarks with "dental care is not expensive, dental neglect *is*". I explain that dental education is very expensive, the most expensive of *all* education; the course is a total of at least six years; start-up costs of dental practices are very expensive – again the most expensive of all professions – often more than $100,000; and daily overhead has been, and still is, rising faster than the Consumer Price Index.

I go on to explain that the dentist is a highly responsible individual, dedicated to his profession and to his patient. He/she has worked very hard to earn this position and continues to work very hard each day, in an exacting manner, draining spiritual and physical resources. I indicate that in today's society, judging and comparing one's worth; assessing years of training in professional skill and judgement; responsibility required daily; increasing overheads; etc., no dentist need apologize for his remuneration.

In all fairness to the media, and to the general public, the above type of explanation or variations thereof, are usually sufficient. Most thinking Canadians do respect dentistry for its worthiness, and dentists are held in high regard. In a recent poll of 25 occupations, ranking each on Honesty and Ethical Standards, dentists stood third, preceded by Clergymen and Pharmacists. Newspaper reporters were 11th and car salesmen were 25th!

The line of questioning regarding incomes seems to always invoke within my own mind – "what is Man's worth?" How can you truly determine whether an income is commensurate with the individual's contribution? I find it impossible to make comparisons of the "average" dentist's income and that of football, basketball and hockey players, who settle for six-figure contracts! My mind is boggled when I read that Michael Jackson took in $70 million for his album, "Thriller", and will top $1 billion in the year, when T-shirts, glitter gloves and other items are added. My own "country boy" economics just can't fathom these economies.

The cynic will tell you that Man's worth is not much at all. Man, the cynic tells us, has in his body. . .

- enough chlorine to sanitize five swimming pools
- enough magnesium for 10 flash bulbs
- enough salt to season 10 chickens
- enough gluten to make five pounds of glue
- enough iron to make a shingle nail
- enough lime to whitewash a chicken coop
- enough glycerine to burst a heavy navy shell

plus 10 gallons of water, 31 pounds of carbon, one-quarter pound of sugar and fat for 10 bars of soap (this one varies considerably!) In all this you have a cynic and a chemist's value of Man's worth – about $4.99; adjusted to account for inflation.

I recently read where a nuclear physicist computed that the atoms in the average man contain enough potential energy to generate 11 million kilowatt hours per pound of body weight. At an average weight of 175 pounds, and using my last month's hydro bill, it could be figured that the nuclear energy value of Man's worth would be about $100,000,000!!

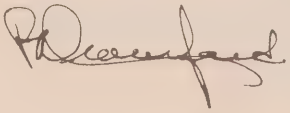
Certain personages have made inestimable contributions to the well-being of their fellow man, and yet have died in abject poverty – having owned little or nothing in their lifetime. Names coming instantly to mind are Christ, Ghandi, Beethoven, Van Gogh, Galileo, Pasteur. . . . How could you possibly put a dollar figure on the worth of these individuals?

Fee guide committees within our associations are among the hardest working – and often, the least thanked. Theirs is the yearly task of equating remuneration for service, i.e., Man's worth. Placing a $$ value on hundreds of different procedures in an almost infinite variety of circumstances, is a formidable feat. Arriving at *equitable* remuneration for professional circumstances and placing it in print is laudatory, but inevitably it must be each and every individual's responsibility to determine his own Worth.

The Manitoba Dental Association has a few lines in its Fee Guide preamble which have impressed me in their simplicity and profundity. . . . .

> "In all areas of treatment, your fees must be guided by the skill, judgement and experience which you have attained; but more important, is their application in your treatment of your patient. Ask yourself:
> "Would you be happy to pay your fee, for your quality of dental treatment, for a member of your family?"

> "It is not what he has, or even what he does which expresses the Worth of a Man – but what he is".
> Henri Frederic Amiel
> (Swiss philosopher. 1821-1881)



DENTAL RESEARCH IN CANADA UNDER STUDY

A study of dental research in Canada is being conducted, co-sponsored by the Medical Research Council and Health and Welfare Canada.

The study is being conducted by a working group whose terms of reference are: "to review the status of dental research in Canada and to make recommendations to Health and Welfare Canada, the Medical Research Council and the Faculties of Dentistry concerning priorities, funding and organizational arrangements to sustain a viable program of dental research in Canada."

The working group consists of Chairman, Dr. John B. Macdonald, and members Drs. Arturo Demirjian, Donald W. Lewis, Barry McBride, Richard Ten Cate and Edward H.K. Yen.

The study will include a review of the relevant practices of granting agencies, an examination of the volume, range of subjects, institutional distribution and quality of current research. It will look also at numbers and qualifications of research personnel and will examine the conditions under which research is conducted including time available, physical facilities, equipment, support services, training opportunities and funding.

In addition to addressing written enquiries to the Deans and the faculty, members of the Working Group are planning to visit each dental school during the current calendar year and the schools will shortly be informed of the schedule for their visits.

Dental researchers or members of dental faculties are invited to address inquiries or concerns about research in Canada to The Working Group on Dental Research, c/o Addiction Research Foundation, 33 Russell Street, Toronto, Ontario, M5S 2S1.

MISSING PERSON

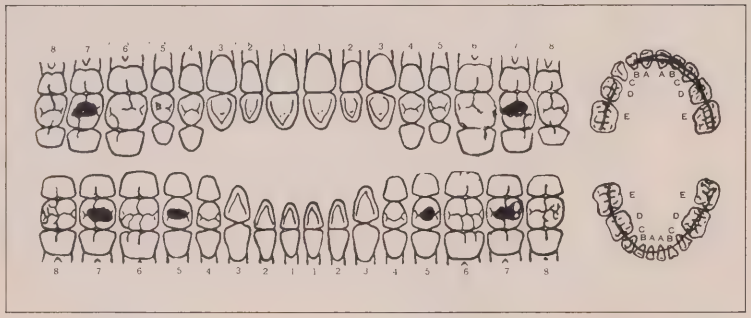
The Journal recently received a request from the parents of Irwin Hirsch, who disappeared in Halifax, Nova Scotia in February 1983, to aid, if possible, in locating him.

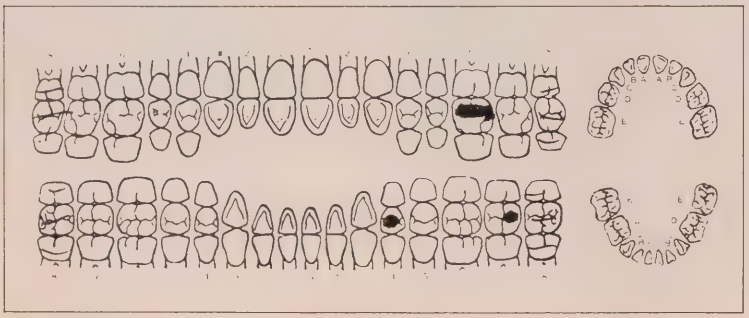
According to his father's description, Irwin Hirsch is 5 feet, 11 inches tall, has blue eyes and dark hair, weighs approximately 160 pounds and is of slight build.

His dental charts and photograph are printed here for information.

Any dental practitioner recognizing the charts or the young man is asked to telephone Hymie Hirsch, at 902-562-1369, Halifax, Nova Scotia.

Irwin Hirsch





DENTAL STUDENTS SHOW STARTLING SIMILARITIES IN PERSONALITY TRAITS

Las Vegas, NV. . . Behavioral scientists from the University of Texas Health Science Center at San Antonio, in cooperative study with the American Dental Association, have found that dental students are a remarkably homogeneous group as far as personality characteristics are concerned.

More than 5,000 dental students/applicants were studied in three consecutive entering classes from nine U.S. dental schools, by use of a reliable personality questionnaire (known as the Clinical Analysis Questionnaire).

The results were rather startling: Each new class of dental students in each school, as well as applicants that were not admitted, exhibited virtually identical personality traits when averaged. Furthermore, some of the personality traits of these future dentists differ rather strikingly from those of most people. Dental students have very strong ego strength, and are more aggressive, venturesome, and conscientious than most people. They are also more confident, conservative, and relaxed than most of the population.

The fact that each new class of dental students and applicants, regardless of school and geographic location, share the same set of personality characteristics suggests that dentistry is a self-selecting profession which appeals to a distinct group of individuals with a highly defined, distinctive personality. Furthermore, all of this suggests that such self-selecting processes with regard to career or vocational paths stems from an uncannily accurate but, essentially, subconscious self-assessment of personal attributes that relate to required occupational skills, and that people in general must engage in such self-assessment when making career choices.

This is a summary of the paper entitled "Personality Traits of Dental Students as Determined by the Clinical Analysis Questionnaire", by Drs. R.P. Suddick, R.J. Herbert, and D.M. DeMarais, of the University of Texas-San Antonio, presented in the Las Vegas Convention Center, during the 63rd General Session of the International Association for Dental Research.

SOME HERBAL EXTRACTS FOUND TO INHIBIT BACTERIA GROWTH

Researchers testing herbal medicines used in China to treat tooth decay and periodontal diseases for the past thousand years have found that some extracts from these plants inhibit the growth of bacteria responsible for causing tooth decay. If the active components of these extracts can be identified, the researchers say, we may someday be using a toothpaste or mouthwash made of ingredients from these folklore remedies.

So reported Dr. Christine Wu-Yuan at the 63rd General Session of the IADR in Las Vegas. Dr. Wu-Yuan, a grantee of the National Institute of Dental Research at Chicago State University, in collaboration with Dr. Ron Tsang Wu at the Yang-Ming Medical College in Taipei, Taiwan, examined old Chinese medicine books and identified about 60 herbs that were commonly cited for the treatment of dental problems.

To test the decay-inhibiting powers of these plants, Dr. Wu-Yuan added extracts from the plants to cultures of *Streptococcus mutans*, the chief bacterium that causes tooth decay, and other oral bacteria. She found that certain extracts inhibited bacterial growth. More than one dozen extracts also proved to be potent inhibitors of glucosyltransferase, an enzyme produced by decay-causing bacteria responsible for plaque formation.

In China, when herbal medicine is prescribed, the herb doctor gives a patient six or seven dried plants which are to be boiled in water or wine. The patient then drinks the broth to obtain the desired medicinal effect. In Dr. Wu-Yuan's laboratory, the plants were boiled in organic solvents such as ethanol, which closely approximates wine.

Many of the plants screened by Dr. Wu-Yuan can be found in the United States, although some grow only in China or Taiwan.

One of the most extensively investigated and potent plant extracts was that obtained from *Melaphis chinensis* (Bell), also known as "Chinese nut gall". The plant takes its name from the nut that develops after a larva attaches to the plant and forms a hard shell around itself. Once the larva becomes an adult insect and vacates the plant, the nut remains. After obtaining the chemical extract from this nut, Dr. Wu-Yuan purified it in her laboratory and found the active component to be a tannin. Tannins are compounds that occur in high concentrations in many plants and also in beverages such as tea, coffee, and cocoa.

Dr. Wu-Yuan is now concentrating her efforts on isolating and purifying several other effective inhibitors of bacterial growth obtained from plant extracts to identify their active components and specific actions.

She stated that the next phase in her research will involve animal studies to test further the effectiveness of the extracts. Should these studies prove successful, it may be possible, she says, to incorporate the active components into a toothpaste or mouthwash to prevent tooth decay.

This is a summary of the paper entitled "Potential of Selected Plant Extracts as Anticariogenic Agents", by Drs. C.D. Wu-Yuan and R.T. Wu, Chicago State University and Yang-Ming Medical College (Taipei), presented during the 63rd General Session of the International Association for Dental Research.

DENTAL RESEARCHERS DEVELOP TISSUE RESTORATIVE MATERIAL

In the search for better artificial replacements for damaged portions of the face and jaws, dental scientists at the Gulf South Research Institute in New Orleans have developed a new restorative material, chlorinated polyethylene (CPE). This substance not only has improved molding and elastic properties, but also can be permanently custom-colored to match a person's facial complexion.

Dr. Lawrence Gettleman reported these findings to colleagues at the 63rd General Session of the International Association for Dental Research in Las Vegas.

Supported by the National Institute of Dental Research, this advance offers hope to thousands of people who suffer from the physical and psychological pain of facial disfigurement from tumors, birth defects, infections and other diseases, and accidents. The challenge is to develop artificial materials, or prostheses, that are life-like in color, form, function, and touch, in order to rebuild these damaged or deformed tissues.

The investigators focused their research on chlorinated polyethylene, an industrial elastic material, because it is both stable and durable. Other substances currently in use, such as silicone rubber, can fray or tear at the edges, requiring periodic replacement of the facial prostheses.

Dr. Gettleman combined CPE with other ingredients to make it softer and to give it the color of human skin. The material was then heated in plaster molds and cast into noses, ears, chins, and eyes. Finally, the scientists touched up the surface coloring of the prostheses with cosmetics to perfect the resemblance to the natural skin. Surface coloring can be altered by patients as often as they wish – for example, to reflect seasonal changes in skin tone.

A special advantage of the chlorinated polyethylene compound is that it can be molded repeatedly. Moreover, its color and texture can be adjusted by permanently embedding cosmetic pigments and/or fibers to achieve a very life-like appearance. Studies with patients are under way to test the comfort, effectiveness, and durability of these new facial replacements.

This is a summary of the paper entitled "Extraoral Maxillofacial Prostheses Molded from Thermoplastic Chlorinated Polyethylene", by Drs. L. Gettleman, P.H. Gebert, L.M. Ross, T.J. Huber, and L.R. Guerra, of the Gulf South Research Institute (New Orleans), presented during the 63rd General Session of the International Association for Dental Research.

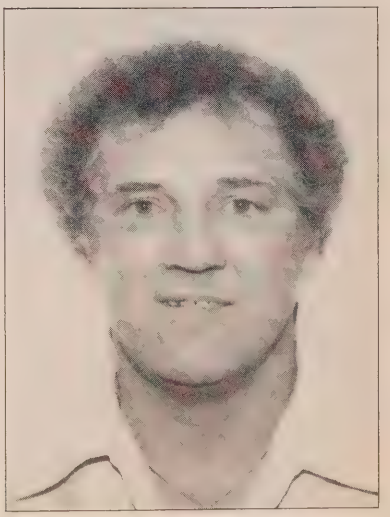
WILLIE DE WIT'S DENTIST-MANAGER RETURNS TO ALBERTA TO PRACTICE

Dr. Harry Snatic, the former Beaver Lodge, Alberta, dentist who managed the promising young Grande Prairie, Alberta, boxer Willie de Wit, from backyard gym level to a silver medal in the Olympics, and then into professional ranks in the United States, has returned to a general dentistry practice in Calgary.

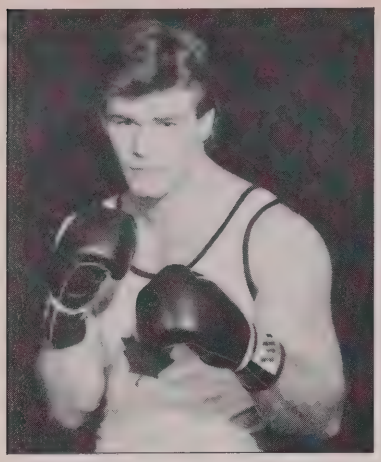
Dr. Snatic recently stepped down as de Wit's manager. He made the announcement after the young boxer's second professional victory in Las Vegas, Nevada.

A graduate of Loyola University's school of dentistry in New Orleans in 1963, Dr. Snatic began to reveal a considerable personal talent as a boxer while still a student.

He practiced dentistry for about eight years in the New Orleans area and in 1971 was licenced to practice dentistry in Alberta. He carried on a general practice in Beaver Lodge, about 20 miles from Grande Prairie for about nine years. During the latter part



Dr. Harry Snatic



Willie de Wit

of that period, the talents of young de Wit came to his attention, and he trained the boy to the point where he won a silver medal at the 1984 Summer Olympics in Los Angeles, all within five years.

When de Wit went professional, Dr. Snatic moved to the United States, and until recently, made his home in Burnet, Texas.

Dr. Snatic purchased the practice of Dr. Ralph M. Duncan in Calgary, and has already begun a general practice there. Dr. Duncan has retired from the profession.

Dr. Snatic maintains a financial interest in de Wit's career and a keen personal interest in the sport of boxing.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on April 26, 1985.

Common Stock Fund	$91.27223
Fixed Income Fund	$44.42756
Money Market Fund	$31.49349
Balanced Fund	$17.96721

Total assets (market value) of the plan were $43,903,739.

The previous month's figures, as of March 31, 1985, stood as follows:

Common Stock Fund	$89.74604
Fixed Income Fund	$43.68803
Money Market Fund	$31.23336
Balanced Fund	$17.62752

Total assets (market value) of the plan were $43,819,855.

For further information write to: Canadian Dental Service Plans Inc., Ste. 600, 2 Lansing Square, Willowdale, Ontario M2J 4Z3 or call the central information services of CDSPI at 1-800-268-5418 (toll free number for Western Canada, Atlantic Canada and Ontario for Code 807 only, 1-800-268-3411 (toll free number for Quebec and Ontario except Code 807), and 497-7117 (Metro Toronto area).

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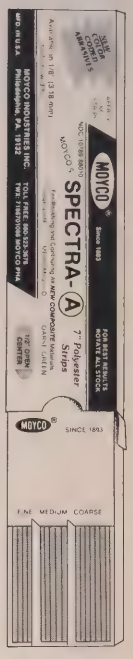

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1985
CDA National Convention
Registration Form

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(Please print for name tag)

Address: _____

City _____ Province _____ Postal Code _____

Telephone No.: _____

Name of spouse, if registered: _____

CDA Pre-Convention Participation Courses (Sunday, September 29)
Limited attendance courses—please indicate choices in order of priority
Open to registered CDA Convention delegates only
Registration required *no later than August 1, 1985*

☐ Custom staining of resin restorations	$250.00	☐ Computerization	$150.00
☐ Custom staining, porcelain crowns	$150.00	☐ Clinical photography	$150.00
☐ Emergency office procedures	$150.00	☐ Quality Control in X-Rays	$150.00
☐ Hydro colloid techniques	$150.00	☐ CPR Course	$ 50.00
☐ Basic Endodontics	$150.00		

$ _____

Convention Registration (September 29–October 2, 1985)

(Please complete appropriate category)

Dentist

General Practitioner
Specialist _____ (Specialty Group)

	to Aug. 1	after Aug. 1	
CDA Member/foreign dentist	$210.00	$250.00	
Non-member	$260.00	$300.00	$ _____

Includes access to scientific sessions & exhibits, three lunches, Sunday registration party and Tuesday Bytown Bash.

Spouse

Dental spouse $110.00 $ _____

Includes access to scientific sessions and exhibits, Sunday registration party, Monday fashion show and lunch, Tuesday tour and Bytown Bash, Wednesday lunch. Indicate tour preference ☐ House & Garden Tour or ☐ Lanark County Tour.

Wake-up Workout – will participate ☐ Yes ☐ No

Hygiene spouse $ 50.00 $ _____

Includes access to scientific sessions and exhibits, sponsored Sunday river cruise (pre-registrants – limited attendance), Registration party/Monday lunch and CDHA Monte Carlo Dance – The Las Vegas Swing.

Hygienist

Full Registration	**to Aug. 1**	**after Aug. 1**	
CDHA Member	$110.00	$120.00	
Non-member	$220.00	$240.00	$ _____

Includes access to scientific sessions, and exhibits, sponsored Sunday river cruise (pre-registrants—limited attendance), Registration Party, Monday lunch and Monte Carlo Dance, Tuesday lunch and Bytown Bash, Wednesday brunch.

Daily Registration			
CDHA Member	$ 50.00	$ 60.00	
Non-member	$100.00	$120.00	$ _____

Day(s) attending _____

Includes that day's scientific sessions, exhibits and luncheon or brunch.

Assistant/Office Personnel

Full Registration			
CDAA Member	$100.00	$110.00	
Non-member	$130.00	$140.00	$ _____

Includes access to scientific sessions & exhibits, Sunday city tour, Registration party, Monday lunch and Casino Night, Tuesday Bytown Bash, Wednesday Breakfast and tour.

Daily Registration		
CDAA Member	$ 50.00	
Non-member	$ 60.00	$ _____

Day(s) attending _____

Includes that day's scientific sessions, exhibits

Student

Dental – complimentary
Hygiene – complimentary
Assistant – $ 10.00 $ _____
Day(s) attending _____
Includes scientific sessions and exhibits only.

Technician

$ 50.00 $ _____
Includes scientific sessions and exhibits only.

Other

$ 75.00 $ _____
Includes scientific sessions and exhibits only.

Additional Social Tickets

Sunday Registration Party	$20.00 pp	$ _____
Monday President's Gala*	$45.00 pp	$ _____
Monday CDHA Monte Carlo Dance – The Las Vegas Swing	$10.00 pp	$ _____
Tuesday Bytown Bash	$40.00 pp	$ _____

*(not included in Registration package)

Total Amount of Enclosed Cheque $ _____

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1985 CDA Convention
1815 Alta Vista Drive, Ottawa, Ontario. K1G 3Y6

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*Please duplicate and complete this form if more than one registration is required.

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(Please list specialty group)
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☐ Student
Other (please specify) _____

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☐ Single ☐ Double ☐ Twin ☐ Triple ☐ Other _____

Indicate first three hotel choices (Rates indicated single/double)

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Please Note: A $75.00 deposit fee is required, payable to the **Housing Bureau, CDA Convention**

Please send deposit and hotel reservation form to:
The 1985 Ottawa Convention
c/o Ms Margot Rayburn
Canada's Capital Visitors and Convention Bureau
222 Queen Street, 7th Floor
Ottawa, Ontario. K1P 5V9
Deadline for reservations: August 28, 1985

Briefly

According to recent statistics on continuing education at the Faculty of Dentistry, Dalhousie University, dentists in Atlantic Canada are keen on keeping current.

Statistics show that in the fall of 1984, 214 dentists from the Atlantic provinces participated in a continuing education course. This figure represents over 30 per cent of all Atlantic dentists.

The province with the greatest number of registrants for courses was Nova Scotia, with 176 participants.

Dr. Hershel Bernstein of Pointe Claire, Québec, has been awarded a fellowship to the Academy of International Dental Studies in Atlanta, Georgia.

The Academy awards the fellowships to dentists or other dental professionals who have contributed to the science of dentistry through leadership, international leadership, or outstanding research.

Dr. Bernstein is a former lecturer in the McGill University Faculty of Dentistry and a member of the American and Canadian Dental Associations. He also holds membership in the American Academy of Implant Dentistry and has lectured extensively in Canada and the United States.

He is chairman of the board of a group dental practice.

The chairman of the Health Disciplines Board of Ontario believes that disciplinary hearings involving physicians, dentists and other health professionals should be open to the public.

Hugh Mackenzie recently told a legislative committee of the Ontario government that "once they're charged with an offence, it should be a public matter.

"There has to be more stringent public accounting," he said. "I believe in self-governance. . . people have to see that the system is working."

Commenting on the matter to a Toronto newspaper reporter, Edward Fox, the deputy registrar of the College of Dental Surgeons of Ontario said his college's disciplinary committee publishes the names of dentists convicted of professional misconduct in only about half the cases. He said that "the committee may feel that publishing someone's name could hurt his chances of rehabilitation."

The newspaper stated that Mr. Fox acknowledged that the public may have "an over-riding right to know the names of dentists found guilty of professional misconduct."

Dr. Jane E. Aubin

Dr. Jane E. Aubin, of the Medical Research Council Group in Periodontal Physiology, Faculty of Dentistry, University of Toronto, was honored recently at the 63rd general session of the International Association for Dental Research, held in Las Vegas, Nevada.

The 1985 Oral Science Research Award was presented to Dr. Aubin.

The award is made in recognition of outstanding accomplishments in basic research in an area of the natural sciences with important relevance for oral biology.

Recipients must not have reached their 36th birthday at the time of the award, which consists of a cash prize and a plaque, and is supported by the Procter & Gamble Company.

Dr. Aubin received her PhD degree in medical biophysics in 1977 from the University of Toronto. She has been recognized for her work that has provided insight into the nature of the populations of cells that inhabit the periodontium. Dr. Aubin was among the first scientists to systematically employ cultured clones of normal cells from the different parts of the periodontium, to study their structural and functional attributes, and regulatory mechanisms influencing the behavior of the different cell types.

A community health nurse in Barrie, Ontario, organized a health fair recently, for 300 Grade Nine students of a secondary school in that town. There were 19 booths, including information on everything from proper nutrition to birth control, drug abuse and dental care.

The nurse, Rose Marie Ballis, said she felt there was great value in enlightening the students about the roles and functions of local agencies and health groups. She said students appeared to be more aware of what constitutes a healthy lifestyle today.

She hopes to make the fair an annual event.

The annual competition for the Canadian Dental Research Foundation (CDRF) award is now open.

The annual award is worth $1,000, and is presented to the student who submits the best report on a research project related to dentistry.

In addition to the cash award, the student is presented with a plaque, and an inscribed trophy goes to the institution at which the research is done. This institutional award is kept by the school concerned for a period of one year until the next award is given.

Rules and entry forms are available from the Canadian Dental Association, 1815 Alta Vista Dr., Ottawa, Ont., K1G 3Y6. Deadline for entries is December 1, 1985.

The American Dental Association recently announced that nominations for the ADA Gold Medal Award for Excellence in Dental Research are being accepted. Deadline for applications is July 31, 1985.

The recipient will receive a cash award of $25,000 and a solid gold medallion. The competition is open to dental researchers from all over the world, including Canadians.

The award recognizes significant contributions either to the advancement of dentistry or to major improvement in the quality of the public's oral health. It will be presented for the first time at the ADA's annual session in San Francisco in November 1985.

Supported jointly by the ADA and Lever Brothers Company, the award will be presented to individuals who, through multidisciplinary or singularly oriented basic or clinical research, contribute to the advancement of the profession of dentistry or to major improvement in the quality of the oral health in the community.

Nominations should be accompanied by a letter stating the candidate's qualifications and list of publications.

For further information, contact: Dr. Carl A. Verrusio, Secretary, ADA Council on Dental Research, ADA Headquarters, 211 East Chicago Ave., Chicago Ill. USA 60611.

Dr. Ronald Hill of Saskatoon, Saskatchewan, an orthodontist, has been elected chairman of the board of Canadian Dental Service Plans Incorporated (CDSPI). Dr. Hill represents the dentists of Manitoba and Saskatchewan on the board.

Dr. Hill also received another recent honor. He was inducted as a Fellow of the International College of Dentists. This honor is conferred on members who have contributed to the advancement of dentistry on an international scale.

Dr. Hill also serves as chairman of the CDA Council on Insurance and Investment.

Dr. Ronald Hill

The Canadian Dental Association's Council on Student Affairs met in Ottawa March 11, to discuss student concerns and formulate plans for the next year. The photo shows the members, plus CDA's Director of Educational Services, Linda Teteruck, and Executive Liaison, Dr. Jack Niedermayer.

Photo: Carolyn Hackland

Front row, left to right:
Linda Teteruck. Chris Wyatt, University of British Columbia. Dan Price, University of Manitoba. Marie-Renée Godbout, University of Montreal. Liliane LeSaux, University of Western Ontario, Chairman Elect. Joyce Watt, Université Laval.

Middle row, left to right:
Dan Beck, University of Saskatchewan, Chairman. Dr. J. Niedermayer, Executive Liaison. Greg Lovely, Dalhousie University, Student Governor. Sam Sgro, McGill University, Student Governor Elect. Greg Jansen, University of Saskatchewan Vincent McMaster, Dalhousie University

Back row, left to right:
Dr. Ed Busvek, Past Student Governor, St. Thomas, Ont. Dr. Tim Barker, Past Chairman, Vancouver, B.C. Al Brouwer, University of Alberta

Cabbage Patch dolls have reached a new level of sophistication in the United States.

The Journal has been advised that an orthodontist in California has fitted braces on more than 100 of the dolls since the beginning of this year. If the doll belongs to a young patient, the service is free. If a non-patient brings her doll in for braces, the fee is $5.

For those who are a bit skeptical, the first Cabbage Patch dolls didn't have teeth, but now, we understand, this has changed. Dr. Don Graham's orthodontic services add a further touch of realism.

A Hamilton, Ont., newspaper columnist got into the spirit of the phenomenon and predicted that when the Cabbage Patch dolls get older, they will get their own income tax forms, social insurance numbers, credit cards, telephone listings, and "some of them will get appointed to the Senate" provided the Mulroney government hasn't abolished it before that time.

Rose Marie Babette

The Wall Street Journal informs us that the average household in the United States spends $106.52 annually on sweets, which is about nine times the amount they spend on tooth care products.

A breakdown provides details about the nature of those sweets: ice cream and cookies account for $45.29; candies and gum – $29.13; cakes and cupcakes – $16.29; doughnuts or sweet rolls – $15.81, and *oral hygiene products – $11.53.*

Is there a relationship between dentistry and religion?

A dentist in Hong Kong appears to indicate this.

A traveller in Asia, during a visit to the bustling metropolis noted an interesting sign in a dental clinic window.

The sign read: "Teeth extracted by latest methodists."

Book Reviews

IONTOPHORESIS IN DENTAL PRACTICE

L.P. Gangarosa

Quintessence Publishing Co. Inc. 1983
Chicago, Berlin,
Rio de Janeiro, Tokyo

In an era of increasing public education, awareness and sophistication, the questioning of the efficacy of certain therapeutic modalities is not unusual. Also, reflecting publication of recent scientific advances in the media, patients' expectation of therapeutic modalities continue to be heightened. Satisfaction of such problems may entail referral of a patient to another colleague or requesting the latest information on a topic from a library. In this regard, an increasing number of monographs are being published on a variety of dental topics, with the Quintessence Publishing Co. Inc. providing the greatest range suitable for both the professional and lay audience. Dental practitioners should certainly be aware of such topics: in addition to saving hours of anguish, they provide an excellent source of continuing education, particularly concerning topics outside the usual therapeutic realm.

Iontophoresis in Dental Practice is an excellent example of such a monograph. Whereas the surface penetrance of many medicaments is inadequate for therapeutic levels to be achieved, the penetrance of ionic or ionized drugs may be enhanced by the use of an energy source; in this case electricity provided by the Electro Applicator System. Thus Iontophoresis comprises the preferred method of applying ions or ionic drugs to surface tissues and the monograph describes in detail this technique for the treatment of aphthous ulcers, lichen planus, recurrent herpetic lesions and dentin hypersensitivity. Unfortunately, the monograph does not emphasize the need to establish a diagnosis before instituting treatment and the differential diagnosis of soft tissue lesions such as lichen planus may well require biopsy. Also other therapeutic regimens may be of value for such lesions. Nevertheless, the monograph describes both the technique and apparatus required for application. In addition to providing an updated literature search on this topic, a practitioner should certainly read this monograph carefully before making the financial outlay for the equipment.

The monograph makes for compulsive reading, but the use of the technique must depend upon personal judgement of the evidence presented. Other monographs in this series will prove of more value.

This book was reviewed by
C.L.B. Lavelle, Department of Oral Biology, University of Manitoba.

DEMINERALIZATION AND REMINERALIZATION OF TEETH

S.A. Leach, W.M. Edgar (Eds.)

IRC Press
Eynshan
Oxford 0XB 1JJ
England

Who has not dreamt of the magic solution that used once in awhile, rebuilds teeth, attacked by the dreaded dental caries. An emotional statement? This elusive goal (or is it an illusion) has been sought for nearly 100 years. Canadians may suspect it has been attained if they become aware of present TV advertising of dentifrices. You may ask therefore, ''is it true''. If you do, then this is the latest and best book on the subject to date. In 292 pages of well written papers (23), and discussions and summaries, the picture emerges.

Without detailing the history of results obtained using various likely mineral systems, using additives to sugar and flour, and varieties of fluoride, the position today is best summed up by realising that laboratory and animal studies are pointing the way, but that in humans the remineralization will be much slower.

The thrust of lectures first concerns diet and dietary methods, but then turns to the

CHILDREN'S BOOK WITH NEW APPROACH TO TEACHING ORAL HEALTH CARE

The recently published children's book not only entertains but also provides basic dental care education to young readers in a subtle manner. Written and illustrated by Jan and Stan Barton Bohonek, Canadian dental students at Case Western Reserve University in Ohio, the colorful book follows PETER MOLAR and his friends on their quest to find and to keep a smile, while introducing dental concepts to children.

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chemistry of enamel and surroundings including plaque and micro-organisms, to possible laboratory models of dental caries and experimental methods. The "best" method for experimentation appears to be the use of human enamel and dentine mounted on a partial denture – now used for about 30 years to my knowledge. Specific possibilities mentioned are polyols – substitutes for sugar, and mixtures of ions such as Ca, PO_4, Sr, F, Zn and tartrates or succinates. And the authors make the following statement: "There appears to be real hope for more effective simple and clinically viable remineralization systems than those presently available".

The value of the book is the depth of the studies described. This reassures the dentist that the remineralization solution has not yet been found, and the reasons become clearer. The complex of plaque, microbial flora, enamel surface and unknowns, plus the chemical and physical variations in the complex due to human variation in genetic and physiologic make-up, as well as diet and so on, has precluded a simple solution – either philosophical or chemical.

Comments; an important field with vast practical applications is dealt with in this publication, and we as dentists must maintain contact with such developments.

This book was reviewed by
Dr R.H. Roydhouse
Faculty of Dentistry
University of British Columbia

THE STRANGE STORY OF FALSE TEETH

John Woodforde

St. Edmundsbury Press,
Bury St. Edmunds, Suffolk, England

I'm not sure "false teeth" hold the same fascination for dentists as the curious public. The problems are uncomfortably close to home. This small (137 pages, soft cover) book is crammed with interesting tidbits about the history of Dentistry and attempts to replace missing teeth in particular. Should someone invent a dental version of "Trivial Pursuit", this book would be a must. All sorts of interesting little known facts beg to be retained to wow your colleagues, should anyone ever want to know. . . . gold band fixed bridges date from 700 B.C. in Tuscany; early teeth made from hippo and walrus ivory decayed the same as natural teeth creating unbearable odour and misery for the wearer; the Battle of Waterloo provided a large number of teeth to be rivetted to denture bases. John Woodforde has included illustrations on almost every page: old forceps, advertisements, cartoons, and a variety of "false teeth".

One of the most interesting chapters deals with the dental problems of George Washington. His decaying teeth plagued him in his twenties and later. Various attempts at dentures caused great anguish. An English visitor in 1790 described Washington: "His mouth was like no other I ever saw; the lips firm and the under jaw seemed to grasp the upper with force, as if the muscles were in full action when he sat still." The reason for such an appearance was an upper and lower denture joined at the back with very strong steel springs which would force the parts into place but also the mouth open if not consciously held closed. In the most well known portrait of George Washington, his lips are stuffed with cotton. This odd outline was faithfully reproduced by the artist.

If fault must be found with the manuscript, it would be in the style of writing. The information is so extensive that one cannot digest it in one sitting. Facts, names, and dates begin to blur after a few pages and the eyes become drowsy. High marks for research, low marks for entertainment value. Certainly any dentist reading this book could at once empathize with attempts to construct artificial tooth replacements in bygone days and feel immensely relieved that dentistry has changed so much for the better. Of course there is still that patient with the negative mandibular ridge who longs to eat corn on the cob again. . . . . .

This book was reviewed by
Dr Larry Laurence, who is in private practice in prosthodontics in Toronto, Ontario.

DENTAL HEALTH CARE IN SCANDINAVIA – ACHIEVEMENTS AND FUTURE STRATEGIES.

Frandsen A. Ed.

Quintessence Publishing Co. Inc.
Chicago

In January 1981 the Scandinavian Working Group for Preventive Dentistry held a symposium on Dental Health Care in Scandinavia. The proceedings of that conference, with the addition of a background chapter on the Nordic dental health care delivery systems, join a short but growing list of publications describing specific international dental care systems.

Reading the book, the reader will be impressed that Nordic societies have accepted the basic philosophy that dental health is essential for people, especially children, to achieve their full human potential. From that basis, Scandinavians then acted resolutely to implement organized preventive programs, especially for families with young children and for children in schools.

Eligibility for the programs is usually on a universal basis and they are administered through co-operation between local and national governments. These programs now serve as field laboratories for world class research on the effectiveness of both traditional and innovative preventive measures and have provided the opportunity for Scandinavian researchers to contribute to the international dental health care literature beyond what you would expect from a population base of 23 million people.

The book consists of an introduction and the aforementioned chapter, Dental Care Delivery Systems in Denmark, Finland, Norway and Sweden. This is followed by the record of six sessions consisting in each case of the working paper, the moderator's comments and the report of a working group's reaction to both. The six major sessions are followed by shorter papers and, finally, the editor's summary, based on the taped discussions of the plenary sessions.

The six sessions in turn document the dental disease levels in Scandinavia, describe and discuss preventive programs separately for preschool children, school children and adults, outline changes in environmental and behavioural factors related to dental health and examine health economics and dental care.

Examples of improving health among children are the reduced need for restorations in Gothenburg, the improved treatment levels in Denmark and declining caries rates in Finland. The fall in caries rates in Finland is attributed to the aggressive publicly-funded topical fluoride programs and the increased use of fluoride dentifrices. However, with success comes further problems relating to the advisability of continuing to mandate a standard package of preventive services and to the potentially excessive manpower supply.

Adult periodontal status among Scandinavians has not improved to any extent and denture wearing at 45-50 years varies from 17% to 43% of the population. Accordingly, in many sessions, the participants argued the same systematic approach be used for adults. The expected resources freed up by declining caries could be directed to the needs of adults and the elderly.

This reviewer found Session 4 on Evaluation of Adult Programs particularly impressive as it illustrated the depth of Scandinavian research. Bjorn's 1974 study of Malmo shipyard workers, showing that traditional dental services did not prevent the gradual destruction of the dentition and Soderholm's 1979 study, showing that approximately 45 minutes of care every 3 months both arrested the progress of periodontal attachment loss and increased the numbers of people with no new inter-

Continued

proximal caries, are just two examples. However, the moderator correctly pointed to the lack of studies on the cost-effectiveness of many programs.

The plenary session emphasized, among other points, the need to use standard dental indices in future studies, the need for systematic programs for adults and the need to justify all programs using economic analysis.

The book is generally well written, excepting Session 3 where there are some slips in editing and the presenter's paper is uneven. The other presenters' and moderator's papers are of high quality and the working groups are often left with little to contribute. However, they do outline directions for future studies thereby emphasizing the continuous search for improvement.

This book should take a valued place in the libraries of dental care planners and administrators. By comparison to these highly developed dental care systems they can compare their own successes and learn of opportunities to evaluate and change their efforts.

This book was reviewed by
Dr James L. Leake, University of Toronto, Faculty of Dentistry, Toronto, Ontario

OBITUARIES/NÉCROLOGIES

AHRENS, A.C.: A Life Member of the Canadian Dental Association, Dr. Ahrens graduated from the University of Alberta in 1927. He was a member of the first graduating class from Alberta. Born in Hamilton, Ontario in 1904, Dr. Ahrens practiced and lived in Alberta for nearly the whole of his dental career.

HEBERT, G.: Né en 1932 et diplômé de l'Université de Montréal en 1957, le Dr Hébert habitait à Rosemère (Québec) au moment de son décès.

LUSSIER, R.: Né en 1900 et diplômé de l'Université de Montréal en 1924, le Dr Lussier habitait à Montréal (Québec) au moment de son décès. Il était membre permanent de l'Association dentaire canadienne.

ROBB, W. Douglas: of Watrous, Saskatchewan. Practised in Regina for 35 years. Lived in Watrous since his retirement in 1983.

ROSS, William James: Professor Emeritus, University of Toronto from which he graduated in 1927 with a DDS. Born in 1902. He had a private practice in Kitchener, Ont., for 25 years. Became director of the Diagnostic Clinic at the Faculty of Dentistry, University of Toronto and head of the dental materials department until his retirement in 1967.

RYAN, R.: A Life Member of the Canadian Dental Association, Dr. Ryan was born in 1919. He was a graduate of McGill University in 1950.

SHUSTER, H.J.: A graduate of McGill University in 1961, Dr. Shuster died recently at the age of 52. He was practicing in Vancouver, B.C. at the time of his death.

VANALPHEN, T.J.: Dr. VanAlphen, a graduate of the University of Western Ontario in 1983, was practicing in Nova Scotia at the time of his death.

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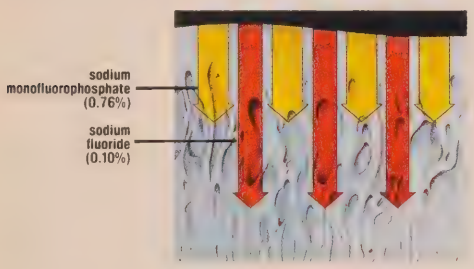
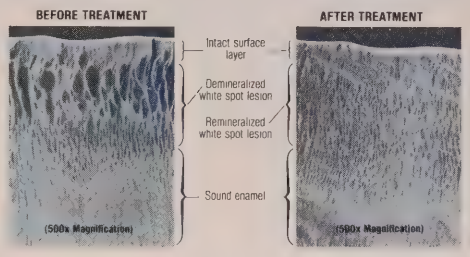
It has been postulated that fluorides reach white spot lesions by penetrating enamel through the interprismatic spaces. Sodium monofluorophosphate, being a larger molecule, reacts with enamel primarily at the surface of a white spot lesion. Sodium fluoride, a smaller molecule, penetrates deeper into the lesion.



Working at different levels, the two fluorides may complement each other, enhancing remineralization over a greater area of the lesion than a single fluoride* alone.

This complementary action means more fluoride is available to enhance remineralization over a greater depth of the lesion than is provided by either fluoride alone.[5,6]



This more complete remineralization has been demonstrated in laboratory studies,[7] and can be seen in the photomicrographs above.

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APPOINTMENTS AND SCHEDULING

COMMENT FIXER LES RENDEZ-VOUS

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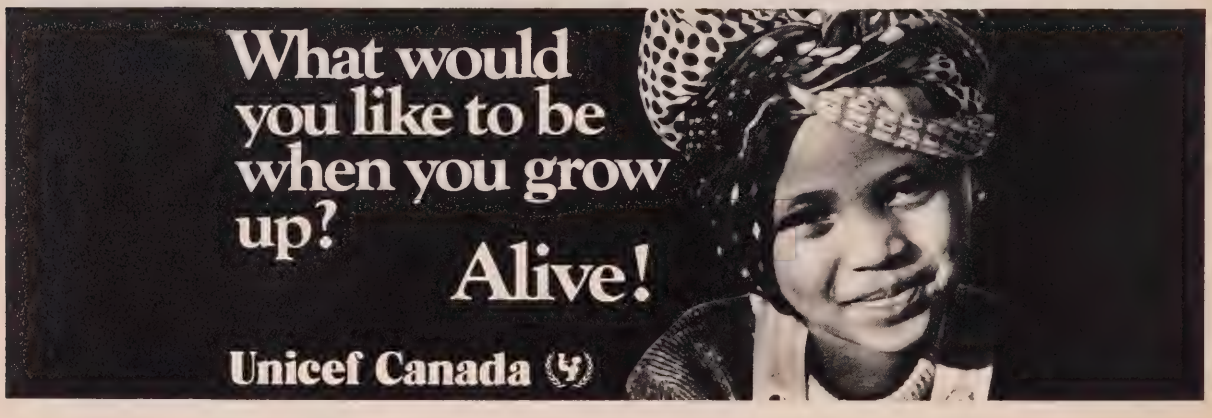

WHY FAILING STUDENTS PASS

A POSITION PAPER

E.G. Sonley, DDS, FICD
Toronto, Ontario

FOREWORD: *Dr. Sonley's paper was the keynote presentation to the ACFD/AFCD's 13th biennial conference on education held in Winnipeg, Manitoba, in June 1984. The conference theme "Why Failing Students Pass" was designed to help dental educators in Canada focus their attention on the many difficulties associated with the evaluation of dental student performance. Full time faculty are frequently caught up with the pressures of teaching, research and part time private practice, leaving the design and maintenance of evaluation systems low on their list of priorities. Part time faculty frequently do not appreciate the importance of their student assessment activities and naturally prefer the more enjoyable aspects of clinical teaching and demonstration. Occasionally the result is an inadequate system of evaluation which allows students to advance when they should be held back or even dismissed. While such occurrences are few in number, they serve to remind us of the vulnerability of our educational institutions and hopefully lead us to consider a variety of desired improvements.*

John Eisner, DDS, PhD,
Chairman ACFD/AFDC
Education Committee

The phenomenon of the inadequate student that somehow manages throughout his academic career to progress to the next level is not a recent development, nor is it confined to any particular school or institution of higher learning, but when this occurs in the "learned professions", the impact can frequently have serious consequences to the public at large. Naturally, should an institution or faculty have an inordinate number of these individuals, the competency of the school would be called into question. Unfortunately, almost every faculty can recall certain students who "made the grade" when all reason dictates that they should not have succeeded.

A student's progress through any academic program is influenced by three factors:

1) the institution
2) the staff involved in the teaching process
3) the students themselves.

The institution attempts, over a prescribed course of didactic and clinical subjects, to evaluate the progress of the student by awarding a grade for written tests and examinations, while also assessing grades for clinical competency, based on visual determination and anecdotal observations of actual performance on, first, laboratory models, and later, live patients. The results thus obtained, if at a certain level of skill, lead to progression to the next level in the program, or, if considered below a pass, result in a failing grade being assessed. If enough of these failures occur in one year, the student can be asked to leave the program. However, this rarely occurs unless all avenues of appeal of the decision have been exhausted – first Faculty, then University Appeals Committee, followed by recourse to the civil courts of the Province.

There are several factors within a Faculty or Institution that allow the failing student to pass, firstly, the written tests and examinations.

- some examiners tend to view the written test as a rather hit-and-miss affair, and prepare a paper that is poor in discrimination and difficulty factors – many multiple choice examinations, for example, are not well developed.
- many papers tend to be a rehash or a compendium of the best questions of the preceding ten years. – students review these papers and given the paucity of truly "different" types of questions possible on most subjects, many students should be able to predict 50-60 per cent of possible

question areas, based on previous examinations.

• in attempting to reduce the number of written examinations several subjects are often covered on the same examination paper, thereby not allowing an in-depth review of each area.

• there is no question that invigilating procedures are inadequate in most institutions, and cheating has become more refined and difficult to detect by the average supervisor. Many students have had a lifetime to perfect and refine their procedures, and most staff are naive and poorly advised, if advised at all, on invigilation procedures. There is no reason, however, to believe that only failing students succeed in passing by cheating, probably many good students as well, resort to this temptation, particularly if the chances of being caught seem to be almost non-existent.

• frequently, where a *marginal* failure has been registered in a written paper, examination committees have been known to raise those to a pass, not on the basis of merit in the examination rereading itself, but rather on "compassionate" grounds. Again, weak students are the only beneficiaries when this occurs.

While virtually all university programs have some form of written examination, Dentistry has the added dimension of a clinical experience requiring constant monitoring and frequent evaluation. Here is the "Achilles heel" of student evaluation, the one area of dental education that is the most important in assessing student clinical achievement. Yet it is probably the weakest of all examination techniques. Clinical evaluation has numerous inherent problems not the least of which are as follows:

• No two Faculties, departments, or instructors seem to be able to find a common ground on which to assess clinical performance. Evaluation systems must take into account that no two patients, mouths, teeth, temperaments or evaluators are the same, nor can they be equilibrated one to the other on any scientific basis.

• evaluations without substantive evidence are useless, and failing (or passing) grades are rarely adequately documented to withstand the searching question or the cross-examination.

• too little importance is put upon the anecdotal report as there can be no numerical "grade" easily attached to it.

• again, as in written examinations, there is a tendency to "raise" a borderline student to a pass, based on humanitarian grounds only.

This is frequently done if the course in which the marginal failure has been received is perceived by Faculty to be a "light" course, versus the "heavies" such as Restorative Dentistry or Prosthodontics.

• there is a tendency to view preclinical practical programs less severely than their clinical counterparts, so that the weak student, for example, in preclinical restorative dentistry, may be helped and in fact, raised to a pass.

• Faculties fail to adequately single out the failing student in the earlier years of their preclinical program, preferring often to believe, or at least hope, that with additional help, and personal counselling, the individual can pass the program. This is often possible, but the crunch occurs when the student enters the clinical portion of the training. By then, it becomes much more difficult to conceive that errors were made in the first year or two of the course and "tightening standards then becomes very distasteful and difficult, particularly when the student, has in the past, received considerable personal staff support in preclinical programs.

• many departments seem to exist as islands unto themselves when evaluating students – some discussion between chairmen early in the academic program would help to prevent the wide discrepancies that often occur between departments with no adequate explanation.

• the first two years should be viewed as a hard-nosed evaluation of a student's manual dexterity and where a student *consistently* displays a lack of it, every attempt should be made to document by all means possible, and *fail the student*, rather than adopt a protective attitude.

• the selection process for prospective dental students presently in place is inadequate to accurately determine the proper student for *dentistry*. Selection by previous academic achievement only establishes one's suitability for the university experience.

Faculties in the Seventies and Eighties have also been confronted by a phenomenon that automatically occurs when failing a student – the appeal. Prior to this time, many institutions had rarely, if ever, found the need to have an active appeals mechanism as students rarely would challenge a failure beyond the department level. With the advent of student confrontations in the early Seventies, universities learned belatedly that the old ways had changed. As a result, many institutions reacted with fear and were slow to educate faculty to countermeasures that would balance against the active challenge to authority. Until recently, appeals were often handled badly by Faculties' and Universities' Appeals Committees as there was rarely adequate documentation on a regular basis on performances of students other than by the written examinations. Because of deficiencies in grading, as well as lack of anecdotal written reports of clinical staff, many weak and failing students were successful on appeal only because Faculties failed to satisfy Appeals Committees that a complete and proper evaluation of the student had been documented. Fortunately, this trend is reversing, but only because Academic staff are acutely aware that they must properly record all discussions, warnings and dealings they have with all students.

While the Institution views the overall performance of the student, the individuals responsible for feeding the vital information into the evaluation process are the teaching staff. If grading of the student's clinical competency is the "Achilles Heel" of the evaluation process by the Institution, the teaching staff is the "Fatal Flaw" itself. The total picture of the student is based upon the impressions he makes upon a handful of instructors who are sometimes poorly motivated, and inadequately equipped to give an unbiased opinion of the student's capabilities in the first place, for a variety of reasons. The Clinical teaching staff therefore contributes in no small way to the failing student being able to pass.

• in nearly all Faculties, the preponderance of clinical teaching falls upon a cadre of part-time instructors, who take time out of their busy offices to supervise students, (for reasons not always related to a desire to teach dentistry).

• there is frequently no continuity between instructor and student. A staff person may see a student on such an infrequent basis he may consider a poor student to "have just had a bad day" and not observe and record his performance adequately.

• many staff are not familiar with the aims of an evaluation program, are not taught an adequate methodology of scoring, and in some instances, are not interested.

• many part-time staff are not familiar with the current teaching within their own departments and are therefore reluctant to give failing grades, particularly where they are unsure of what the student has been taught.

• many staff will not give a failing grade but will opt for a pass, fearing a confrontation with a student, and a requirement to "justify the failing grade" – not an unjust request on the part of the student.

• younger instructors often do not feel they have the depth of clinical experience to provide confident clinical decisions and student evaluations.

• more senior instructors sometimes become complacent and less critical with time, projecting a rather fatherly image that forgives anything and passes everyone.

• Part-time Faculty who are specialists *could* have a "conflict of interest" situation vis-à-vis students. They realize they depend on practising dentists for referrals and it is not

inconceivable that the instructor that portrays the "good-guy" image is, in fact, playing to the students for consideration after graduation. Obviously, the more critical the instructor, the less likelihood of referrals.

- Evaluation systems often do not take into account the fact that the preponderance of grades will be rendered by part-time staff who only use the system once a week, and are often faced with a scoring system that is complex rather than simple.
- Finally, few staff, full or part-time, seem willing to submit anecdotal reports on students *in writing*, although they frequently will voice opinions on a student's weaknesses and strengths. These reports can be as substantive as actual grades when evaluating students' performances if properly documented, but many staff tend to be less than cooperative in this regard. Fear of confrontation with the student, the possibility of being a witness for an appeal, and a laissez-faire attitude, are major contributing factors to this problem. In the opinion of most instructors, it is easier to fail a student on a written paper than on a preclinical or clinical procedure. A wrong answer is easy to detect, but clinical instructors can vary widely in their opinions as to what is considered a failing grade, particularly on an actual patient.

The students themselves are the third factor that contributes to the problem. The days when a student would complacently accept what a teaching institution chose to disseminate have long gone. This is not a negative aspect of today's educational systems. From a child's earliest experiences in the education process he has been conditioned to accept the fact that few people fail – some just progress faster and further than others in a given period of time. While competition in the primary years has been viewed as undesirable and almost a negative value, the student realizes as the phase of higher education approaches that in many universities and in certain courses – "many apply, but few are chosen". Those that are chosen have to attain the highest grades. When a student has been accepted into a Dental Faculty he knows that he had to be near the top of the educational ladder to make it, and he expects that nothing is going to stop him now.

It will take a superhuman effort on the part of an institution and it's staff to convince any student in the program that he is ill-equipped to succeed. Should a dental student seem to be heading for failure, there are few professional programs open to him without re-entering the large mass of applicants to go through the competitive selection process again in another course. The natural instinct, therefore, is to fight failure, and appeal at all levels, since one has everything to gain if successful and everything to lose if he/she is not. Failure, or threat of it, becomes a life and death struggle with no holds barred and numerous precedents leading the way. It is the rare student who will not make a total fight of it when failed at any level of a program.

If one examines examples of failing students that pass, certain characteristics occur, not all in the same student, and some characteristics more often than others –

- they are often identifiable early in the program as borderline – frequently by the end of their first year;
- they frequently receive early staff attention in the form of closer supervision or additional help, or both;
- often are raised to a pass in some subjects because they were borderline and yet were cooperative and pleasant;
- often quiet, blend into the background, receive help from classmates in preclinical areas;
- are often adept at cajoling instructors to complete phases of their project to help them along;

Faculties must ask themselves if they believe that all students successfully entering Dentistry should graduate or do they believe that in some classes there are individuals who can never be properly prepared in the regular undergraduate program to serve the public as they should. If they believe that, they have a duty to protect the public and the profession by failing the incompetent student. Then serious consideration must be given to do so. All Faculties have two distinct areas of responsibility in attempting to correct the difficulty encountered by promoting the marginal or failing student. The first is to the University and the Institution itself and should include:

- developing a definitive policy toward the marginal and failing student – raising a grade should only be on academic merit;
- reviewing the entire grading system, particularly clinically, with a view to simplicity and increased discrimination within the grades themselves;
- giving consideration to the possible "weighting" of courses, one against the other;
- seriously reviewing the whole student selection process, and including some form of psychological evaluation as many industries and police forces for example, require for all their candidates;
- establishing frequent interdepartmental chairmens' meetings to keep all departments appraised of weak or problematic students, and in turn informing the affected students and key staff.

The second area of responsibility is to the staff itself in an attempt to increase the effectiveness of its teaching and evaluating roles, which, after all, are its prime function. To this end thought should be given to:

- instilling in all instructors their responsibility in student evaluation – they are the cornerstones of the whole system;
- ensuring that all staff are fully aware of department philosophies and teaching. This is probably best done through staff orientations and in-service training each academic year with compulsory attendance;
- carefully scrutinizing the effectiveness of current staff and indicating their pluses and deficiencies in teaching methods and grading practices;
- interviewing and examining carefully all potential staff members, starting them at the preclinical levels in the program and after service there, they could ultimately progress to the clinical arena, where grading is more difficult;
- encouraging increased use of anecdotal reports as well as the clinical grade. Staff must be strongly motivated to do this and guidance and direction must be shown by the Faculty;
- establishing short courses on the methodology of preparing written papers, with critical evaluation of previous examinations;
- establish short courses on the appeals process which should include documentation required, how to conduct or be a witness at appeals and the jurisprudence of this legal process.

With a concentrated effort it should be possible to reduce the numbers of failing students that seem to inexplicably slip through the Academic web and graduate. Realistically, however, it is probably impossible to ever achieve the goal that only the deserving will graduate, and that any academic grading system can ever be infallible. That is no reason, however, to not make an honest and serious attempt to get closer to that Utopia than we are today.

The very fact that the Association of Canadian Faculties of Dentistry selected "Why Failing Students Pass", as the topic for its 1984 Biennial Conference on Education is indicative of the scrutiny this problem is receiving today. It is important also to realize that all Canadian Faculties are actively addressing improved methods of evaluation and definite progress is being made within each institution.

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HAEMOPHILIA AND DENTISTRY

Carolyn Hackland

DISCUSSION

Haemophilia used to be a condition which struck the fear of dentistry into both the haemophiliac and his family. Modern dental treatment, the emphasis on prevention, and modern treatment of haemophilia have changed that perception considerably.

The dictionary defines haemophilia as "an inherited disorder of the blood, marked by a permanent tendency to haemorrhage, spontaneous or traumatic, due to a defect in the coagulating power of the blood."

Children and adults with haemophilia need no longer suffer from that fear of dentistry that in the past kept haemophiliacs from seeking treatment until it became a major undertaking. According to both Dr. John Hardie and Dr. Arlington Dungy, Chiefs of Dentistry at the Ottawa Civic Hospital and The Children's Hospital of Eastern Ontario, respectively, new coagulating agents and drugs have made dental treatment of the haemophiliac patient safer and less difficult for both dentist and patient.

While dental treatment for a haemophiliac is still more costly in both money and time than for the conventional dental patient, treatment can now be accomplished with relatively little pain and trouble.

The one problem that could lead to more difficulties for a haemophiliac patient, particularly a child, is poor oral hygiene. The results of poor oral hygiene, while not good for any patient, could lead to extractions or oral surgery, which become complicated when treating a haemophiliac.

"The results of poor oral hygiene are entirely preventable," Dr. Dungy told the Journal. "The bottom line, particularly in haemophiliac children, is prevention."

"If a haemophiliac becomes involved in dental treatment, procedures can be complicated and costly, due to time in hospital, time lost from school or job, and other considerations," said Dr. Dungy.

Dr. Hardie agreed, telling the Journal that a dentist treating a haemophiliac patient should always do so in a hospital environment.

"Very many haemophiliac adults we treat in the Civic can be treated on an outpatient basis, but there is always a consultation with the patient's haematologist. The haematologist will then come up with a plan for administering coagulants before treatment. Each plan depends upon the degree of severity of the disease and the dental procedure to be performed," said Dr. Hardie.

The haemophiliac dental patient, however, according to the Canadian Haemophilia Society, is no more or less susceptible to dental disease than any other segment of the population. A society pamphlet entitled "Dental Aspects of Haemophilia" states "there is nothing about haemophilia which prevents an individual from having good dental health if they practice all of the appropriate dental health procedures. On the other hand, haemophilia does compound and complicate the results of dental neglect."

Dr. Dungy supported this view, saying "Healthy mucosa will not bleed and mucosa can be kept healthy if proper oral hygiene is maintained."

"These are patients to whom every conceivable form of prevention, including home fluorides and pit and fissure sealants are terribly important," Dr. Dungy told the Journal.

The Canadian Haemophilia Society supports this view, advocating regular dental checkups, starting at age two, use of a soft toothbrush daily, flossing gently daily and home topical fluoride treatments.

Haemophiliacs should be treated, according to both Dr. Hardie and Dr. Dungy, and the Society pamphlet, to the same types of preventive measures as all other types of dental patients. Haemophiliacs should also take the same types of precautions to prevent periodontal disease and dental caries as any other group of patients.

Some of the special concerns of a haemophiliac dental patient include loss of baby teeth, extractions, orthodontics and prosthodontic treatment. According to the Society pamphlet, neither orthodontics nor prosthodontic treatment should cause a haemophiliac any problems, and extractions can be handled more easily because of modern drugs and blood replacement products.

"New coagulants and drugs for the treatment of haemophilia have made treatment of the haemophiliac patient both safer and easier for both the dentist and the patient," said Dr. Hardie.

Dr. Dungy said that for haemophiliac children in particular, he would advocate undertaking dental treatment in a multidisciplinary hospital environment.

One complicating factor in the life of the haemophiliac currently is the concern with AIDS (Acquired Immune Deficiency Syndrome).

"The current concern with AIDS, although a very small risk to the haemophiliac in reality, is causing some fear in the haemophiliac community at the present time. This is one reason, in my view, why the dental care of a haemophiliac should be undertaken in a hospital environment," said Dr. Dungy.

According to Dr. Dungy, however, dental complications related to a haemophiliac dental patient, particularly a child are largely preventable.

"Regular dental examinations, good home care and continued proper oral hygiene practices can be instrumental in preventing dental treatment of a haemophiliac," he said.

"To have to take unnecessary blood replacement products for treatment of preventable dental problems is a tragedy," Dr. Dungy told the Journal.

More information on haemophilia and dentistry is available from the Canadian Haemophilia Society, Chedoke Centre, Patterson Building, P.O. Box 2085, Hamilton, Ontario, L8N 3R5.

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WOODCARVING FOR DENTISTS

CREATIVE STRESSBREAKING

D.J. O'Brien, DDS
Weston, Ontario

DISCUSSION

Considering the mounting concern about stress in dentistry, Dr. Jim O'Brien of Weston, Ontario suggests, "how about a hobby such as woodcarving?"

An accomplished woodcarver himself, Dr. O'Brien advises that the art is in a renaissance. For example, he said, the Ontario Woodcarvers' Association has grown from 10 members to more than 400 in just five years. Currently there are more than 12,000 people taking woodcarving classes in Toronto alone.

He says that carving a scene or a portrait "in relief" or a decoy "in the round" can be as easy for a dentist as carving an amalgam – allowing for some differences in size and shape. The main thing, he says, is to enjoy your hobby; you don't have to be good at it to enjoy it.

How to get started? Select one of your favorite slides or a print negative and project it onto a board of pine or basswood. Then draw your outline form. With a Bard-Parker No. 15 scalpel, cut around a foreground object to a depth of 2 mm. "Convenience Form" is established by removing the 2 mm of background wood with a nonclogging ruby stone from the Schein Dental Supply or from Hal McGray[1], in a slow speed handpiece or the Foredom dental lab engine. "Retention Form" can be established by undercutting the foreground object to make it stand out in greater relief. Contour the surface and add detail by making "V" cuts with the scalpel. Finish the preparation with a wood sealer, then stain and shellac. There you have it – your first relief carving.

Figure 1 Pine: 9" × 12" × 2"

Dr. O'Brien advises to learn as you go by reading. There are excellent books in most libraries about how to begin woodcarving as a hobby. Prepare by saving a portfolio of pictures you would like to render in wood some day. It is amazing, he says, how this can "spark your interest in other art forms such as painting, photography and sculpture in other media." The "Old Lady with Pipe" (**Figure 1**) illustrated here, originated with a magazine photograph, the scene from Rothenburg was from a color slide (**Figure 2**), and the "Country Auction" (**Figure 3**) was from a print of a painting. The "Carriage Stop" was inspired by Christmas gift wrap.

At this point, the embryo woodcarver may wish to acquire a standard set of six carving chisels to enjoy the activity even more.[2] Your old set of Wedelstat chisels and your Kirkland three-sided periodontal knife are very helpful for detail work. To carve harder woods, such as the mahogany bust of "David, Age Twelve" (**Figure 4**), add the surgical mallet and bone chisel.

The dentist-woodcarver will now begin to see how this hobby makes dentistry easier, Dr. O'Brien noted. He says that you may get so many dental instruments behind the bar in your family room at home (**Figure 5**) that you may have little to work with at your office. This way, he says (tongue in cheek) you may have to "refer work out and you can have more time to live a little."

Carving a bust

To do a bust, he says, take an alginate impression of a cooperative face (with evacuator tips in the nostrils) and pour a plaster model. A close up photograph of the eyes helps as does your Boley gauge and a carpenter's contour duplicator (for $3.98), to make templates of the profile.

Another sideline to woodcarving may be the carving and painting of bird figures – either stylized or realistic. Feathers may be textured with a wood burner or a Shofu inverted cone pink stone in a Foredom lab engine (**Figure 6**). A wildlife artist-carver such as Paul Burdette[3], gives excellent courses in carving birds and painting them with acrylics.

Chip-carving

For variety, one may try chip-carving, also called incised, intaglio or Kerbschnitzen. Decorate a jewellery box (**Figure 7**) or your house. You can do any pattern or design by cutting different shaped triangles with two basic knives. These knives and a

"How to do it" book may be ordered from Wayne Barton at the Alpine School of Woodcarving[4].

Yet another field of woodcarving is power-carving. Illustrated here is a bust of James Shaver Woodsworth, founder of the Canadian Commonwealth Federation (now DNP) Party, carved in black walnut (**Figure 8**) for the Etobicoke Historical Society's Shaver House (Woodsworth's birthplace). Tools used included a chain saw, a Sears 1/4-inch, high speed (die) grinder, a Black and Decker work wheel and a hobby Dremel drill. A plastocene model was first made from an old portrait by Karsh and other photographs.

You may get to the point where competition will inspire an even keener interest in the hobby, Dr. O'Brien says. If so, try the International Woodcarving Competition at the Canadian National Exhibition held in Toronto, where there are more than 2,000 entries from around the world in many different categories (including First Year Carvers)[5].

Woodcarving clubs and classes are springing up all over the country. It can be an enjoyable experience to meet other carvers from all walks of life, exchange ideas and renew your enthusiasm, Dr. O'Brien says.

"I'm certain there are many woodcarving dentists already," he told the Journal. He feels it would be to the advantage of all if they begin to communicate with each other. They should exchange photographs of their work to inspire each other, he believes.

Dr. Jim O'Brien conducts a practice at 1570 Kipling Avenue, Weston, Ontario. M9R 2Y1.

REFERENCES

1. McGray Wildlife Sculpture, 1516 Con. 5, West Flamborough, R.R. #2, Branchton, Ont. N0B 1L0. (Send for bird carving supplies brochure showing ruby stones.)
2. Lee Valley Tools Ltd., 2680 Queensview Drive, Ottawa, Ont. K2A 1T4. (Send $3.00 for tool catalogue.)
3. Burdette Wildlife Gallery, R.R. #2, Orton, Ont. L0N 1N0. (Send for schedule of bird-carving classes.)
4. Wayne Barton, Alpine School of Woodcarving, 225 Vine Ave., Park Ridge IL 60068. (Send $10.80 U.S., for book: "Chip Carving Techniques and Patterns." Send $20.00 U.S., for the set of two knives.)
5. Canadian National Exhibition, Agriculture Dept., Exhibition Place, Toronto, Ont., M6K 3C3. (Send for Woodcarving Contest rules.)
6. "Chip Chats", the Magazine of the National Woodcarvers' Association, 7424 Miami Ave., Cincinnati, OH 45243. (Send $5.00 U.S., for a one-year subscription.)

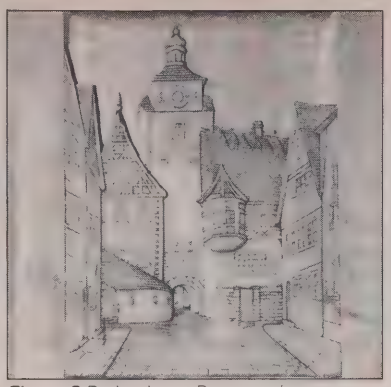

Figure 2 Rothenberg: Basswood: 16" × 24" × 1"

Figure 3 Country Auction: Pine: 12" × 15" × 2"

Figure 4 Mahogany. Life Size

Figure 6 Basswood decoy, ready for painting

Figure 5 Dr. Jim O'Brien's "studio."

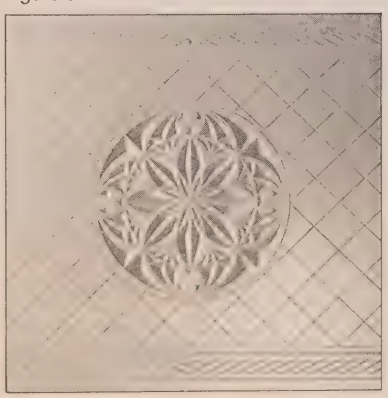

Figure 7 Example of "chip-carving"

Figure 8 Black Walnut. Life Size.

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*Principles of aetiology and pathogenesis governing the treatment of periodontal disease—Dr. Harald Loe, Director, National Institute of Dental Research

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CURRENT USE IN CANADA

Cornelia J. Baines, MD, MSc.

Editor's Note: *Originally published as a letter to the Editor, the following article is reprinted by permission from the Canadian Medical Association Journal, Vol. 131, December 15, 1984. The information contained in this article, and table was, until published in the CMAJ, unavailable in such a complete and short reference form.* *The author is currently with the Epidemiology Unit, National Cancer Institute of Canada, 12 Queen's Park Cres. W. University of Toronto, Toronto, Ontario, M5S 1A8.*

DISCUSSION

The coding of several thousand self-administered questionnaires returned to the Epidemiology Unit, National Cancer Institute of Canada by persons with diabetes from across Canada brought to light an unexpected variety of trade names of artificial sweeteners. Since there are three major types of artificial sweeteners currently in use in Canada – saccharin, aspartame and cyclamates – it became necessary for us to identify the type of sweetener being marketed under each trade name at a particular time. Were this not done, it would not be possible to isolate the long-term adverse effects that any of these substances might cause.

Given the lack of a reference index for all artificial sweeteners used both in the past and currently, it seemed useful to share with practising physicians, nutritionists and possibly other researchers the information collected to date from our survey. The products listed in Table I are limited to those reported to date by respondents to our questionnaire. Some of the products listed have long since been discontinued; for example, Sweeta products were available in Canada from 1959 to 1972, yet in the 1980s people were still reporting their use. At the time of writing there remain a number of products mentioned by the respondents that we have been unable to identify or describe and that are therefore not listed in the table.

As for the components of the products, liquid sweeteners are generally sold in aqueous solution with small amounts of preservatives. Energy-bearing bulking agents (e.g., sorbitol, lactose and dextrose) are largely limited to the powdered or granulated preparations. The table indicates which products were marketed in Canada and whether they are still available. It does not, however, show changes in types of sweeteners that have been marketed under a single name: for example, Sucaryl used to be a combination of a cyclamate and saccharin, and now it is a cyclamate.

Assembling the information recorded in the table required the help of nutritionists in hospitals in Halifax, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Calgary, Edmonton and Vancouver. Mr. Walter Maszczak, Mr. Robert T. Ferrier and Mrs. Jean Sattar, of the Health Protection Branch, Department of National Health and Welfare, Ottawa, Ms. Lyn O'Brien, of the Calorie Control Council, Atlanta, Georgia, Mrs. Jill Metcalfe, of the British Diabetic Association, and medical directors of a number of drug companies were all very cooperative in answering questions and providing references. Finally, Mrs. Eithne McMullen, of the Epidemiology Unit, did useful "field work" in pharmacies and food stores in Toronto.

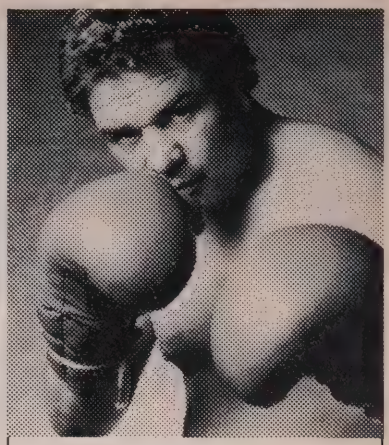
Reprint requests to Dr. Baines

TABLE I

Artificial sweeteners reported used in a questionnaire study of diabetes

Sweetener and trade names	Form	Contents*	Bulking agent	Region of distribution	Currently marketed
Saccharin					
Adolph's	Powder	3% (Na)		Canada	No
Drug Trading	Tablet	15mg†		Canada	No
		30 mg†		Canada	No
		60 mg†		Canada	No
		65 mg†		Canada	No
Featherweight	Tablet	16.2 mg (Na)		USA	Yes
	Liquid	3.5% (Na)		USA	Yes
Hermesetas					
Regular	Tablet	12.5 mg (Na)		Canada	Yes
Sprinkle Sweet	Powder	†	Maltodextrin	Britain	Yes
Lifebrand	Tablet	15 mg		Canada	Yes
		30 mg		Canada	Yes
Natrena	Tablet	†		Ireland	Yes
Necta Sweet	Tablet	12.3 mg (Na)		USA	Yes
		24.6 mg (Na)		USA	Yes
		49.2 mg (Na)		USA	Yes
Norwich-Eaton	Tablet	16.2 mg†		Canada	Yes
		32.4 mg (Na)		Canada	Yes
Saxin	Tablet	†		Britain	Yes
	Liquid	†		Britain	Yes
Sionon	Powder	(Na)	Sorbitol	Canada	?
				Britain	Yes
Sprinkle Sweet	Powder	2.25% (Na)	Dextrins	USA	Yes
Stanley	Tablet	32.4 mg		Canada	No
Sucaryl	Tablet	†		USA	Yes
Sugar Twin	Powder	†	Maltodextrin	Britain	Yes
Sugar Twin	Packet	34.3 mg (Na)	Dextrose, 0.77 g	Canada	Yes
Sweet Crystals	Powder	10% (Na)		Canada	No
				USA	Yes
Sweetex	Powder	†	Sorbitol	Britain	Yes
	Tablet	†		Britain	Yes
	Liquid	†	Glycerol	Britain	Yes
Sweet'n Low	Packet	36 mg (Na)	Lactose, 1.0 g	Britain	Yes
			Lactose, 1.0 g	USA	Yes
			Dextrose, 0.93 g	Canada	Yes
Cyclamate					
Brown Twin	Packet	264 mg (Na)	Dextrose, 0.53 g (with caramel colouring)	Canada	Yes
Diet Weight	Tablet	100 mg (N)		Canada	Yes
	Liquid	100 mg/mL		Canada	Yes
Hermesetas	Packet	194 mg (Na)	Lactose, 1.0 g	Canada	Yes
	Liquid	12% (Na)		Canada	Yes
Hermesetas Finesweet	Cube	70 mg (Na)		Canada	Yes
Lifebrand	Packet	200 mg (Na)	Lactose, 0.6 g	Canada	Yes
Sucaryl	Liquid	100 mg/mL (Na or Ca)		Canada	Yes
	Packet	200 mg (Na)	Lactose, 0.6 mg	Canada	Yes
	Tablet	100 mg (Na or Ca)		Canada	Yes
Sugar Twin	Liquid	96.1 mg/mL (Na)		Canada	Yes
	Packet	264 mg (Na)	Dextrose, 0.53 g	Canada	Yes
Sweet Magic	Packet	280 mg (Na)	Dextrose, 0.69 g	Canada	Yes
	Liquid	100 mg/mL (Na)		Canada	Yes
Sweet'n Low	Packet	280 mg (Na)	Dextrose, 0.72 g	Canada	Yes
Sweet-10	Liquid	135 mg/mL (Ca)		Canada	No
Weight Watchers	Packet	200 mg (Na)	Dextrose, 0.6 g	Canada	Yes
Aspartame					
Canderell	Powder	†	Lactose	Britain	Yes
	Tablet	(Na)		Britain	Yes
Equal	Tablet	18 mg (Na)	Lactose, 0.04 g	Canada	Yes
	Packet	35 mg	Dextrose, 0.86 g	Canada	Yes
Miscellaneous					
Schneekoppe	Tablet	4 mg Na saccharin with 40 mg Na cyclamate		West Germany	Yes
Sweeta	Tablet	10 mg saccharin with 10 mg cyclamate		Canada	No
	Liquid	126 mg saccharin/mL with 130 mg cyclamate/mL		Canada	No

*Single dagger (†) = salt not specified; double dagger (‡) = concentration not ascertained.



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THE LUNG ASSOCIATION

A STUDY
OF DENTAL HABITS, KNOWLEDGE AND OPINIONS OF NURSING MOTHERS

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SUMMARY

Reorganization of public health services will lead to establishment of five health units in the Province of Newfoundland. Local community dental health data will be required for the efficient administration of dental services in each unit. This paper reports on the findings of an interview of 282 nursing mothers about dental health practices, knowledge and opinions, and it also describes a survey method which could be employed to collect dental health data. The areas investigated included utilization of dentists' services, toothbrushing aspects, infant feeding practices and the use of fluorides. The results indicated that all the nursing mothers claimed they owned and used a toothbrush. Just under one half stated they had not visited a dentist in the past 12 months. Regarding infant feeding practices, 5.3 per cent stated they would add sugar or corn syrup to the infant feeding formula (milk). It was also found that a majority of the mothers were insufficiently informed about the use of fluoride supplements for their children. There is a need to consider avenues through which nursing mothers may be encouraged to use effective preventive methods for themselves and their children.

SOMMAIRE

À Terre-Neuve, la réorganisation des services de santé publique entraînera la création de cinq services de santé. Dans chacun, on aura besoin de données sur la santé dentaire des communautés locales pour gérer efficacement les services dentaires.

Cet article présente les résultats d'une interview menée auprès de 282 mères qui allaitent leurs enfants touchant leurs habitudes, leurs connaissances et leurs opinions reliées à l'hygiène dentaire. De plus, on y décrit une méthode de sondage qui peut être utilisée pour recueillir des données en santé dentaire. Les points sur lesquels les questions ont porté comprennent le recours aux services offerts par le dentiste, le brossage des dents, les habitudes touchant l'allaitement du bébé et l'usage des produits fluorurés. Toutes les mères interrogées ont déclaré qu'elles ont une brosse à dents et qu'elles l'utilisent. Juste un peu moins de la moitié ont admis qu'elles n'ont pas visité le dentiste au cours des 12 mois précédents. Touchant les habitudes d'allaitement, 5,3 pour cent des mères ajoutent du sucre ou du sirop de maïs à la formule ou au lait du bébé. Par contre, la majorité d'entre elles sont mal informées au sujet de l'usage des suppléments fluorurés pour leurs enfants. Il y aurait donc lieu de songer à des moyens pour encourager les mères qui allaitent à recourir à des méthodes de prévention efficaces tant pour elles-mêmes que pour leurs enfants.

In line with reorganization of public health services, three regional health units have been established in the Province of Newfoundland. It is expected that eventually a total of five health units will be operating in the province, with each unit expected to provide or ensure provision of a minimum level of community health services, including preventive dental services, to the residents.[1]

To assist the health units in this task, each unit will require local community dental health data[2] with respect to three areas: the dental health needs of the community; the dental services available; and dental habits, opinions and knowledge.

At the present time, the limited local dental health data are confined to treatment statistics from the Newfoundland Children's Dental Program. It is hoped that the recently completed Atlantic Canada Children's Oral Health Survey,[3] yet to be published, will add to this data base with respect to the dental needs of the school children.

The primary purpose of this study was to explore the third area of data collection – the current dental habits, opinions and knowledge of a specific group of individuals – nursing mothers. It will be recalled that the report of the working group on preventive dental services states that "the means are at hand to eliminate much of two of the major dental diseases – dental caries and periodontal disease." However, the report continues, "the reasons (for this not being done) are complex, involving the attitudes and actions of individuals, the dental profession and government."[4]

On the issue of attitudes and actions of the individuals, it is interesting to note that several older studies show that the general public does possess quite accurate information about dental health practices, the adoption of which should, in view of the health profession, result in optimum dental health.[5,6] On the other hand, more recent studies[7-11] indicate that some of the population are inadequately informed regarding the relative benefits of preventive methods available for the two most common dental diseases. For example, reported results indicate that when it comes to the prevention of the most common dental disease in children – dental caries – the public is unaware that the use of fluoride in children should be the number one priority.

Design of the survey

The aims of this study were twofold: to determine the dental health practices, knowledge and opinions of nursing mothers in St. John's; and to describe a method which could enable health units to obtain such data at the local level.

There are several significant reasons for choosing nursing mothers as a target group. First, there is evidence that suggests that many parents become aware that their children's teeth need care and attention during the pre-school years.[12] Second, both major dental diseases become established in childhood, particularly through the home environment. Each day the parent is teaching the child desirable or undesirable dental

behaviour or a combination of both and, in this respect, the first five years of a child's life are the most important in his development.[13] Several studies show that children's dental habits are closely related to those of their mother.[14] By five years of age, all the deciduous teeth and 16 of the permanent teeth have had their enamel development completed,[15] and some of the enamel's resistance to the decay process may be established.[16]

METHODS AND MATERIALS

The establishment of proper sampling frames for household interviews was not possible for this survey because of time and resource constraints imposed by the nature of the grant provided by Employment and Immigration Canada for this summer internship project. The procedure adopted was for the interviewer to visit the two maternity hospitals in the City of St. John's on a daily basis and to consider, as the potential sample, all mothers who delivered babies in these hospitals during the period June 1 to August 19, 1983.

The ward clerks of each hospital, on a daily basis, provided the interviewer with a listing of all mothers who had a successful delivery on the previous day. Mothers admitted on weekends and holidays were generally approached during the next work day.

Two parts of an interview schedule were developed for this study: the first (subsequently referred to as the consent form) was designed to elicit information related to the parents' demographic data, education, occupational status, infant feeding practices, perinatal health of the child and questioning the mother if she had visited the dentist in the past 12 months, and if she and her child would be willing to participate in a further interview six months later.

The second part of the interview (subsequently referred to in this paper as the questionnaire) included questions on the mother's usual toothbrushing habits and her knowledge and opinions of the use of fluorides in dental health and of children's practices relating to dental health. To obtain responses, guidance in terms of a range of possible answers was given for most of the questions. No validity checks were made of the accuracy of the respondents' answers, nor was reliability (i.e., consistency) of the responses assessed.

SURVEY METHOD

Personnel consisted of an interviewer employed full time for the summer period (May 16 to September 7, 1983) – approximately 16 weeks.

The interviewer visited the hospitals each morning and obtained from the ward clerk a list of the mothers' names and their ward or room number. Each mother was then approached by the interviewer, who introduced herself and presented the mother with an envelope containing a consent form and a letter briefly explaining the purpose of the survey. The interviewer arranged to collect the consent form on the same day, where possible, and at that time administered the questionnaire. In cases where the mother was not available for any reason (e.g., if visitors were present), the interviewer was advised to use her own judgement before efforts to make contact were abandoned.

In one hospital, the interviewer was required to wear a white coat. Each interview took about 10 minutes.

RESPONSE

Most of the mothers surveyed, live in and around St. John's, the capital city of the Province of Newfoundland. The city water is not fluoridated. From the daily hospital listings provided, it was noted that a total of 554 mothers had successful deliveries during the period under study. Over the three month period, 506 nursing mothers were contacted in the two hospitals. Among these 506, 25 (4.9 per cent) refused to participate in any way (for example, "No, I am not interested"). Of the remaining 481, 104 (20.6 per cent) were not available after the first contact (when the project was briefly explained and a consent form provided).

As the survey involved two parts (consent form and questionnaire), there was some degree of partial response; for some persons, consents were obtained but the questionnaire was not completed. Of the 481 contacted nursing mothers, 377 (78.4 per cent) completed and returned the consent form and 282 (58.6 per cent) were interviewed for completion of the questionnaire; these 282 accounted for both parts completed, and is the sample size analyzed and described in the following findings.

The number of live births in St. John's over the 12-month period 1981-82 was 4,193. The total population of St. John's was recorded as 154,820 in the 1981 Canada Census Survey.[17]

FINDINGS

In this study, 36 per cent of the mothers interviewed were aged 25 or under, 56 per cent were 26 to 35 years of age and 5 per cent were aged 36 or over. The youngest was 17 years old and the oldest 45.

All educational levels were represented, with the majority of the mothers having some high school level education (39.4 per cent), attended a vocational or trade school (34 per cent); 17.4 stated they had either attended university or completed university level education.

USE OF DENTISTS' SERVICES

Data on the utilization of dentists' services indicated that 52.8 per cent of the mothers stated they had visited their dentist in the past 12 months. When asked how often, in their opinion, should a child visit the dentist, the majority (82.6 per cent) indicated twice a year, and 15.2 per cent stated once a year.

When asked at what age, in their opinion, a child should first visit the dentist, most of the respondents (81.5 per cent) stated three years old or earlier. Other responses were "on starting school" (3.5 per cent), "after eruption of permanent teeth" (4.9 per cent), and "don't know" (6.3 per cent); 3.5 per cent did not respond.

TOOTHBRUSHING

All 282 mothers questioned claimed that they owned and used a toothbrush: 68.4 per cent indicated that they usually brushed their teeth at least three times a day, 23 per cent twice a day, and 8.1 per cent once a day. It was interesting to note that 85.1 per cent were of the opinion that dentists recommended that adults brush their teeth at least three times a day.

To the question 'When, in your opinion, should you begin brushing your child's teeth?" 41.8 per cent reported that this should begin as soon as the teeth erupt. About 25 per cent thought it should be at the age of one year and 20 per cent believed at three years of age.

INFANT FEEDING PRACTICES

The data on infant feeding practices indicated 34.0 per cent of the mothers were totally breast-feeding. Of the 178 mothers who were bottle-feeding, and breast-feeding and bottle-feeding, 15 (5.3 per cent) said they would add a sweetener (sugar or corn syrup) to the formula (milk). In addition, another 23 of those bottle-feeding are expected to add a sweetener to the milk, as they indicated they would use a noted brand of formula. It is an accepted practice for mothers using a particular brand of formula to be advised by the public health nurses to make up for its deficiency in daily required calories by adding corn syrup or sugar to the milk.[18]

One hundred mothers (35.4 per cent) reported that they would give their child a pacifier, and of those, 6 (2.1 per cent) stated that they would give a pacifier with a sweetener. It was also identified that the 15 nursing mothers in this study who indicated they would add the sweetener to formula when they got home from the hospital had fewer years years of formal education than the overall sample (**Table I**). It was further found that all 15 of these mothers had

at least one other child, and 53.0 per cent stated that they had visited the dentist in the past 12 months.

USE OF FLUORIDES

Out of 282 mothers, 65 (23 per cent) indicated that water fluoridation is understood to mean adding fluoride to water, and 23 (8.1 per cent) were more specific in indicating that water fluoridation brings the level of natural fluoride in water to about 1 part per million. Asked what water fluoridation does, 190 (67.3 per cent) indicated that it helps to prevent tooth decay. The rest were not sure of its effects.

When asked if they knew what fluoride drops/tablets were used for, 141 (50.0 per cent) answered in the affirmative. These 141 mothers were further asked a two-part question: 1) the age at which fluoride drops/tablets should be initiated, and 2) the frequency with which fluoride drops/tablets should be given to children to prevent tooth decay. Of these 141, 34.7 per cent were of the opinion that fluoride drops for children should be initiated soon after birth, and 48.2 per cent considered that fluoride drops/tablets should be taken daily.

It is interesting to note that when these mothers were asked what they thought the dentists' recommendations were regarding these questions (initiation age for fluoride supplements and frequency of intake), it appears from **Table II** that most of them were unsure of the dentists' recommendations on these practices.

Finally, about 90 per cent of the mothers consented to be interviewed again, and about the same percentage agreed to have their child participate in a fluoride supplementation program, if available.

DISCUSSION

Dental epidemiological data of the Newfoundland population are scarce, and this makes it difficult to make meaningful comments on the trends of dental health in this province. However, the general impression of health professionals in the St. John's area is that the level of oral health in school children has improved since the establishment of the Children's Dental Program in 1950-51.

It is recognized that in the particular setting of this study, it is not unexpected that new mothers would choose the right answers. It is noted that the relationship between knowledge, attitude and practice is intricate. With the resources of a health unit, such a study should be completed with more attention to the sample design.

The findings from this study indicate that about 52 per cent of the nursing mothers had visited the dentist in the past 12 months. Lee,[11] in a survey of expectant mothers in British Columbia, found that 68 per cent reported a dental visit within one year. Lewis,[19] in a survey of females 18 and over in Ontario, found that 64.5 per cent reported a visit within a year. The Canada Health Survey[20] reported that 56.3 per cent of females aged 25-44 years had visited a dentist within the previous 12 months.

Of the mothers in this study, 81.5 per cent thought that it is best to start taking a child to the dentist when he/she is three years old or younger. Todd[10] in a survey of mothers of five-year-old children, found that 60 per cent believed the same.

This study indicates that the nursing mothers' practice with respect to their own toothbrushing is more favourable, with 91 per cent reporting brushing two or more times daily. Lee[11] found that 79 per cent of expectant mothers reported brushing two or more times a day. In a survey of parents of pre-school children, Armstrong and Lewis[21] found that 78 per cent reported brushing at least twice a day.

With regard to frequency of toothbrushing, the best available information indicates that when "one considers the time needed for plaque to mature, the old adage of brushing after every meal, which was usually impractical anyway, seems unnecessary. Thorough cleaning at 24-hour intervals is a routine that probably best fits in with most people's daily schedules and is one that is compatible with gingival health. This appears to be a practical regimen for dentists and hygienists to recommend for their patients."[22]

It would be interesting to determine if the toothbrushing behaviour of the mothers in this study is learned and adopted by their children, keeping in mind that children's dental practices have been reported to be closely related to that of their mother and noting that in this study most mothers (87 per cent) thought that they should begin brushing their child's teeth at a very early age.

Of the mothers in this study, 5.3 per cent indicated that they intended to use a sweetener (sugar or corn syrup) in formula (milk) and 2.1 per cent to use a sweetener (honey) with a pacifier. Winter et al.[23] reported that the most important factor in the incidence of rampant caries in the preschool population is the prolonged sucking of sweetened feeding bottles, hollow feeders and dummies. The sweetening agent used

TABLE I

Infant feeding practices: details of mothers indicating the use of sweetener added to milk

Age Range of the mothers	% (n)
Under 25	40.0(6)
26 - 35	60.0(9)
36 and over	0.0(0)
	100 (15)

Education of the mothers	% (n)
Elementary level (grades 1-6)	0.0(0)
High school (grades 7-11)	60.0(9)
Vocational school	33.3(5)
University	0.0(0)
Not stated	6.6(1)
	99.9(15)

TABLE II

Fluoride supplements: Supplementary questions to those who know what fluoride drops/tablets are used for

	Mother's personal opinion % (n)	Mother's opinion of what dentists recommend % (n)
(a) Age when fluoride supplements should be initiated:		
Soon after birth	34.7(49)	33.3(47)
When three years old	26.9(38)	23.4(33)
After eruption of permanent teeth	8.5(12)	8.5(12)
Other times	4.2(6)	2.8(4)
Don't know	18.4(26)	26.2(37)
Not stated	7.0(10)	5.6(8)
	99.7(141)	99.8(141)
(b) Frequency of intake of fluoride supplements for children:		
Daily	48.2(68)	43.9(62)
Once a week	7.8(11)	4.9(7)
Other times	15.6(22)	14.8(21)
Don't know	22.6(32)	32.6(46)
Not stated	5.6(8)	3.5(5)
	99.8(141)	99.7(141)

was invariably sugar (sucrose). Derkson and Ponti[9] reported that parents of children with nursing bottle syndrome tend to be younger and have fewer years of formal education. King[8] identified children of teenage mothers more at risk of developing dental caries. As pointed out earlier, it is interesting to note that the small group of 15 mothers in this study was less educated than the overall sample. It would be useful to investigate and determine the prevalence of nursing bottle syndrome and the relationship of this syndrome to factors such as infant feeding practices in this province.

Finally, it was found that the mothers' knowledge with respect to the age at which fluoride supplements should be initiated and the frequency with which fluoride supplements should be given to their children is less favourable; 17.4 per cent of the overall sample were aware that fluoride supplements should be initiated soon after birth, and 24 per cent of the total sample were aware that fluoride supplements should be administered daily. Todd[10] also reported the lack of knowledge in mothers of young children regarding benefits of fluorides in dental health. Lee[11] found that 23 per cent of the expectant mothers knew that fluoride supplements for children should be administered once a day.

Use of fluoride in dental health requires new learning by parents. This poses several problems; for example, it has been reported that health professionals need to be made aware of the importance of the role of fluorides in prevention of dental caries.[7]

Fortunately, there are some avenues through which nursing mothers may avail themselves of the opportunities to learn and receive accurate and specific information about their responsibility for caries prevention for their children. Approximately 90 per cent of nursing mothers in the province have frequent and regular contacts with either a public health clinic or a private practice clinic, from the time the child is born until he/she is about five years of age, as part of the immunization program for children. Should appropriate information be available for parents and health professionals in both public and private clinics, and should these parents willingly accept the responsibility for caries prevention, the clinics could serve as appropriate environments for providing support and for reinforcing of accepted dental behaviours for nursing mothers and their children, at least up to the pre-school age. This would ensure that children entering kindergarten at about five years of age do so with some additional protection against dental caries and would be receptive to further preventive programs in a school environment. School dental health programs can be most useful as a source for reinforcing dental health routines already begun in early childhood through parental intervention.

CONCLUSION

Nursing mothers in the unfluoridated city of St. John's were found to be misinformed or inadequate in their practice of some good dental health habits. They and their children may therefore be less likely to adopt effective preventive dental behaviours. The organizational structure for promoting practical and efficient dental preventive methods in pre-school children is in place. However, there may be a need to develop and disseminate easily understood information for use of health professionals and parents, to encourage learning and acceptance of current and effective methods in prevention of dental diseases.

More specifically, this study indicates, firstly, that the percentage of nursing mothers who visit a dentist at least once during pregnancy, could be improved; secondly, there may be a need to present more accurately to parents and health professionals what is currently known about toothbrushing and fluorides, and their effect on dental health. Finally, the survey method described could be used to assist health units with collection of similar dental health data at local level, with more consideration being given to sampling detail, to allow the results to be applied to the whole population under study.

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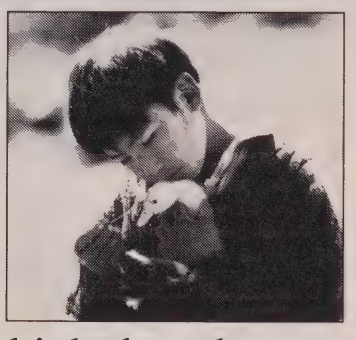

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A SUMMARY OF THE RESULTS OF THE NATIONAL PREVENTIVE DENTISTRY DEMONSTRATION PROGRAM*

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INTRODUCTION

Between the fall of 1977 and the spring of 1982, The American Fund for Dental Health (AFDH) administered the largest, most comprehensive school-based preventive dentistry program ever conducted anywhere in the world. This program, the National Preventive Dentistry Demonstration Program (NPDDP), was supported by The Robert Wood Johnson Foundation (RWJF). It was designed to determine the costs and effectiveness of several types and combinations of school-based preventive dental procedures.

A unique feature of the program was the involvement of a third organization, The Rand Corporation, of Santa Monica California. The Johnson Foundation has a policy of having its funded programs evaluated independently by groups or organizations separate from those administering the programs. In the case of the NPDDP, Rand was selected as the independent evaluator and was assigned the responsibility for data management and the interpretation of the results. As the program evolved, Rand also became involved in the planning process and participated actively in data collection as well as data analysis and interpretation.

The cooperative but separate relationship of the three organizations represents an important strength of the program. The result was a program conceived by dentists, designed largely by dentists (with important contributions from Rand), and managed by dentists. But, the data were entered and analyzed chiefly by a non-dental, independent group of researchers who introduced new approaches to data analysis and a level of sophistication and objectivity that might have been absent had AFDH conducted the analysis alone.

This paper provides a brief description of the program design, summarizes its major findings, and discusses some of their implications for the future. Greater detail is provided in a series of monographs available from The Rand Corporation.[1-8]

SOMMAIRE

*De l'automne 1977 au printemps 1982, l'*American Fund for Dental Health *(AFDH) a géré, dans les écoles, le programme de dentisterie préventive le plus important et le plus élaboré jamais lancé au monde. Ce programme, le* National Preventive Dentistry Demonstration Program *(NPDDP), a été commandité par la* Robert Wood Johnson Foundation *(RWJF) et avait pour but de déterminer les coûts et l'efficacité de diverses mesures de prévention dentaire adoptées dans les écoles.*

Fait intéressant à noter, l'expérience engageait une tierce partie, la Rand Corporation, *de Santa Monica en Californie. En effet, la RWJF exige toujours que les programmes qu'elle subventionne soient évalués par des organismes indépendants de ceux qui les gèrent. Dans le cas du NPDDP, c'est la* Rand Corporation *qui a été choisie et qui a été chargée de la gestion des données ainsi que de l'interprétation des résultats. Durant la mise en oeuvre du programme, la firme a été sollicitée également pour la planification, la*

*The study on which this paper is based was supported by The Robert Wood Johnson Foundation. Paper presented at the Canadian Dental Association National Conference on Dental Caries Decline, Montreal, February 2, 1985

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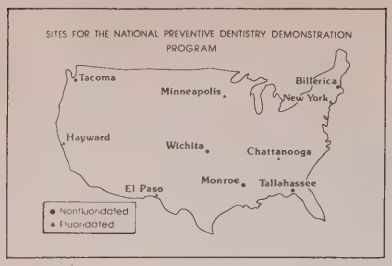

Figure 1

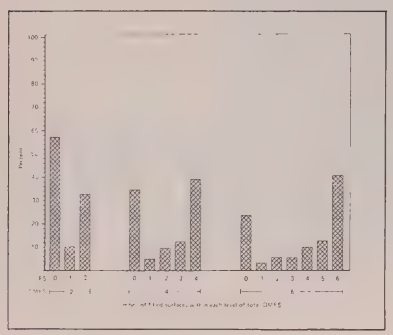

Figure 2 Distribution of the number of filled surfaces for children with DMFS scores of 2, 4, and 6

This figure shows that most children with a non-zero DMFS score tended to have either all their decayed surfaces filled or none of them filled. There were relatively few children who had about 50 per cent of their decayed surfaces filled. For example, among those children who had a DMFS score of 4, 36 per cent had none of these 4 surfaces filled, whereas 39 per cent had all of them filled. Only 9 per cent of the children with a DMFS score of 4 had 50 per cent of the surfaces needing care restored.

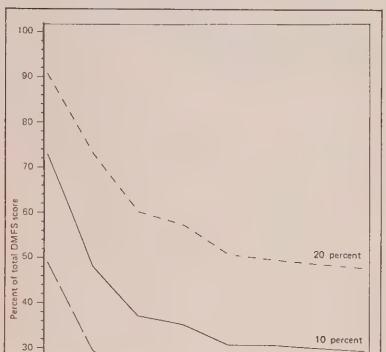

Figure 3 Percentage of all DMF surfaces accounted for by children with the top 5, 10, and 20 per cent of the DMFS scores

cueillette des données, leur analyse et leur interprétation.

La collaboration qu'il y a eue entre les trois organismes engagés dans le programme a contribué à lui donner du poids. Ce fut ainsi que le programme a été conçu par des dentistes, élaboré par des dentistes (aidés grandement par la Rand Corporation*) et géré par des dentistes. Toutefois, les données recueillies ont été surtout analysées par un groupe de chercheurs indépendants n'appartenant pas au milieu dentaire. Celui-ci a pu aborder les données avec un esprit nouveau, démontrant un degré de perfectionnement et d'objectivité dont l'AFDH n'aurait peut-être pas pu faire preuve en effectuant seule l'analyse.*

Cet article présente une brève description du programme, en résume les résultats et en commente les répercussions pour l'avenir. Pour obtenir plus de précisions, on peut s'adresser à la Rand Corporation *qui a rédigé des monographies touchant le NPDDP.*

RATIONALE FOR THE PROGRAM

By the mid 1970s, when the NPDDP was designed, many studies had demonstrated the efficacy of a variety of preventive procedures. The success of those procedures when applied individually raised the question of a potential additive effect were they to be administered in combination. The fact that no prior study had attempted to quantify the possible additive effects of selected combinations of preventive procedures, and that the true costs of operating preventive programs had not been documented, served as the rationale for the demonstration program project.

PROGRAM DESIGN

The design of the NPDDP was based on four primary assumptions reflecting the conventional wisdom about caries prevention during the mid 1970s. First, it was assumed that the prevalence of dental caries in the United States was relatively stable. Epidemiologic data from the two U.S. nationwide surveys of children completed up to that time indicated virtually no change in caries prevalence between 1960-62 and 1971-74.[9-12] Second, the individual success of various preventive procedures led to the assumption that if the most successful procedures were to be applied in combination it would be possible to reduce caries incidence by as much as 90 per cent. Third, because the costs reported for the individual procedures were quite low, the assumption was made that the cost of the preventive program would be much less than the cost of restoration. And finally, it was assumed that a school-based preventive program would be highly efficient since the schools provided a captive audience.

At its inception, the NPDDP involved approximately 25,000 elementary and secondary school children in grades 1 through 8, in ten geographically distributed sites throughout the country, five fluoridated and five fluoride-deficient (**Figure 1**). The longitudinal cohorts, those to be followed for four years, comprised slightly over 20,000 children in grades 1, 2, and 5, more than 80 per cent of those eligible to enroll. The remaining 5,000 children in grades 3, 4, 6, 7, and 8, constituted a cross-sectional group examined to establish baseline data against which later comparisons could be made.

At each site elementary schools were assigned to one of six treatment regimens containing preventive procedures of proven efficacy and safety (**Table 1**). One regimen included only clinical procedures, two were limited to classroom procedures, and two contained both clinical and classroom components. Children in the sixth regimen served as a longitudinal control group and received only annual examinations.

Dental auxiliaries and classroom teachers provided the clinical and classroom components of the program, following standardized in-service training. Initially, the clinical staff at each site consisted of a seven-member team: program coordinator (teacher, nurse, or dental hygienist), two clinical hygienists, two dental assistants, a clerk, and a part-time supervising dentist.[3] As student attrition occurred over time, staff size was reduced. In general, teachers conducted classroom preventive procedures and the educational program as a part of their regular duties; in a few sites clinical staff and/or paid aides provided some of these procedures.

The NPDDP began in August 1976 and terminated in June 1983. The first year was devoted to planning, selecting the ten operating sites, designing data collection procedures, developing and procuring equipment, selecting and employing site personnel, and pilot testing. Baseline dental examinations began in September 1977 at roughly one site every other week. Preventive dental care at each site was initiated on a phased schedule about one month after the completion of baseline examinations. Preventive services were provided for four years at nine of the 10 sites (one site, New York City, was terminated after three years). Clinical procedures were provided for grades 1, 2 and 5 children for the full four year period but classroom procedures for Cohort 5 (fifth graders) were discontinued after the sixth grade. During the final year of the program, 1982-83, data were analyzed and reports prepared.

BASELINE RESULTS

One of the program's first activities consisted of providing clinical (visual and tactile) and radiographic dental examinations to all of the enrolled children before they received any of the program's preventive procedures. This initial or baseline clinical examination was conducted by a staff of 31 examiners. Radiographs were taken using a van that was specially equipped and staffed for this purpose.[4]

During the clinical examination, each tooth and/or surface was classified as either deciduous, unerupted, sound, decayed, missing, or filled. This classification allowed for the computation of various measures of the magnitude of decay, location of decay, and need for restorative care. The status of deciduous teeth was not included in the study. Background data were collected from a survey of parents.[5]

DMFS SCORES

DMFS scores (i.e., the average number of decayed, missing due to decay, and filled tooth surfaces on permanent teeth) varied substantially across the ten sites (**Table 2**). In general, these scores were lower in fluoridated than in fluoride deficient sites although the differences were in a range of 20-35 per cent, rather than the 50-65 per cent established in studies conducted in the 1950s (**Table 3**). There also was considerable variation in average DMFS scores between sites with the same fluoridation status, and some overlap of sites with different fluoridation status. In both instances of overlap, actual fluoridation levels were determined to be at variance with reported fluoridation status.

RELATIONSHIP WITH DEMOGRAPHIC CHARACTERISTICS

Childrens' DMFS scores increased with age. Girls tended to have slightly higher DMFS scores than boys of the same age. This difference was explained by an earlier eruption pattern in girls. Black children tended to have higher average DMFS scores than other racial groups, especially at nonfluoridated sites. Although the teeth of black children also erupted sooner, that fact did not account for their generally higher DMFS scores.

Children from lower socioeconomic status (SES) families had higher average DMFS scores than children from higher SES families (**Table 4**). They also tended to have proportionately fewer fillings and more decay. Consequently, children from low SES families were more often in need of dental care.

TABLE 1

Assignment of treatment procedures to regimens at nonfluoridated and fluoridated sites

	Nonfluoridates Sites		Fluoridated Sites	
Regimen	Clinic	Classroom	Clinic	Classroom
1. Comprehensive	Sealants Prophy/gel	Rinse/Tablet Education	Sealants Prophy/gel	Rinse Education
2. Modified Comprehensive	Prophy/gel	Rinse/Tablet Education	Sealants	Rinse Education
3. Clinic	Sealants Prophy/Gel		Sealants Prophy/gel	
4. Classroom		Rinse/Tablet Education		Rinse Education
5. Modified Classroom		Education		Education
6. Longitudinal Comparison				

NOTE: Children in all six regimens received annual dental examinations.

RECEIPT OF CARE

Children with caries experience on permanent teeth tended to have either all or none of their carious surfaces filled (**Figure 2**). The likelihood that a child would receive restorative care increased with age until the child turned 10 years old, after which it remained relatively constant. The likelihood of receiving restorative care also increased with DMFS scores until about eight surfaces were affected by decay. After that point, there was a decline in the proportion of affected surfaces that were filled with each increase in total DMFS.

CARIES DISTRIBUTION

About 50 per cent of the dental decay occurred on the occlusal surfaces. The buccal-lingual share of the total DMFS score decreased with age, whereas the interproximal share increased with age (**Table 5**).

Perhaps the most important finding of the baseline examinations was the fact that today dental caries is disproportionately distributed among a relatively small percentage of the child population. In effect, most children have no real caries problem; a few, about 20 per cent, have a serious problem (**Figure 3**). These children are more likely to be black, of lower SES, and the recipients of very little dental care.

LONGITUDINAL RESULTS

Following completion of the final examination, four years after baseline, the results in terms of treatment effectiveness and costs, were evaluated, as well as the extent to which the preventive services had been provided.[6]

COMPLIANCE

Compliance with program procedures was assessed through teacher questionnaires, annual analyses of supplies consumed, regularly conducted staff observation, and clinical records. In general, compliance was judged to be high. For example, analyses of the school Years 2 and 3 data indicated that over 90 per cent of the children assigned to the prophy/gel regimens received at least three of their four scheduled treatments (the vast majority received all four), and over 90 per cent of the children who were scheduled to receive sealants had one or more teeth sealed. The consumption of mouthrinse supplies during these same two years was close to the amount expected, but the use of fluoride tablets was substantially less than expected.

TABLE 2

Rank of Sites Ordered By Mean DMFS Score

Rank	DMFS Non-fluoridated	Fluoridated
1	1.94	El Paso
2	3.02	Minneapolis
3	3.18 Wichita	
4	3.22	New York
5	3.53	Chattanooga
6	3.87 Tallahassee	
7	4.30 Pierce County	
8	4.40	Hayward
9	5.38 Billerica	
10	5.72 Monroe	

Note: Values are averages of the mean DMFS scores for the eight ages 6 through 13 years (**see Table 4.4**). Standard errors range from 0.05 (El Paso and Minneapolis) to 0.14 (Billerica and Monroe). Most are near 0.10.

EXAMINER RELIABILITY

The results of this study are based on data derived from a series of five examinations of participating children conducted over a four year period. The validity of the results reported depends, in part, upon the

TABLE 3

Mean DMFS scores, by site and age

	6	7	8	9	10	11	12	13
Nonfluoridated								
Billerica	0.76	1.77	3.32	4.09	4.77	7.04	9.21	12.07
Wichita	0.47	1.04	1.97	2.21	3.39	4.48	5.23	6.65
Pierce County	0.49	1.23	2.78	3.31	4.39	5.50	7.18	9.55
Monroe	0.70	1.73	3.03	3.13	5.39	7.75	10.37	13.67
Tallahassee	0.38	1.00	1.97	2.84	3.53	4.66	6.86	9.73
Fluoridated								
Chattanooga	0.48	1.16	2.42	2.80	3.59	4.19	5.82	7.75
New York	0.43	1.26	1.88	2.62	3.24	4.78	5.35	6.23
Minneapolis	0.56	1.28	1.86	2.45	3.47	4.16	4.74	5.62
Hayward	0.50	1.63	2.34	3.15	4.35	5.67	7.63	9.90
El Paso	0.28	0.59	1.28	1.69	2.09	2.57	3.10	3.92
NF Average	0.56	1.35	2.62	3.11	4.29	5.89	7.77	10.33
F Average	0.45	1.18	1.96	2.54	3.35	4.28	5.33	6.68

TABLE 4

Mean DMFS scores, by SES Quartile and age

	6	8	10	12
Nonfluoridated				
Lowest 25%	0.68	3.30	5.39	9.47
Next to lowest	0.55	2.67	4.90	8.47
Next to highest 25%	0.52	2.46	4.16	7.23
Highest 25%	0.43	2.09	3.22	6.70
Fluoridated				
Lowest 25%	0.52	2.28	3.44	5.71
Next to lowest 25%	0.49	1.92	3.74	4.97
Next to highest 25%	0.44	1.86	3.27	5.04
Highest 25%	0.39	1.89	2.87	4.91

Note: Site means within a fluoridation status were weighted equally in computing the tabled values.

TABLE 5

Percentage contribution to total DMFS score of each type of surface at nonfluoridated and fluoridated sites

	Nonfluoridated			Fluoridated		
Age	Occlusal	Buccal-Lingual	Proximal	Occlusal	Buccal-Lingual	Proximal
6	53	38	9	48	48	4
7	54	36	10	51	43	6
8	52	35	13	51	38	11
9	52	34	14	51	38	11
10	48	31	21	52	35	13
11	46	29	25	49	33	18
12	46	26	28	48	31	21
13	45	25	30	47	28	25

NOTE: Includes both clinical and radiographic findings.

TABLE 6

Percent savings in DMFS increments in four years by Regimen, Cohort and Fluoride Status NPDDP 1982

	Non-fluoridated		Fluoridated	
REGIMEN	1+2	5	1+2	5
1. Comprehensive	60.7	40.2	58.9	65.8
2. Modified Comprehensive	21.7	13.7	45.7	52.8
3. Clinic	53.7	38.5	56.6	56.7
4. Classroom	21.4	-11.6	1.8	-19.9
5. Education	3.8	-12.6	-11.4	-13.7

accuracy of those examinations. Extensive analyses were made to determine the degree to which the program's clinical examiners agreed with themselves and each other in their evaluation of the children's oral health.[7]

At each examination, from 10 to 14 per cent of the children received a second clinical examination within a few hours of the first one. About 50 per cent of the replicate examinations involved a child seen twice by the same examiner thereby providing data about concurrent intraexaminer consistency. The remaining children in the replicate sample had one examiner for one examination and a different examiner for the second examination in order to provide information about interexaminer agreement.

Analyses of the replicate examinations indicated that examiners were slightly more consistent with themselves than they were with each other. Their overall level of reliability was comparable to that of examiners in other studies. About one-half of all the discrepancies among examiners involved disagreements as to whether surfaces were sound or decayed. However, disagreements did not occur often enough to interfere appreciably with the detection of possible treatment effects.

TREATMENT EFFECTIVENESS

The effectiveness of the treatment procedures was measured by their ability to prevent decayed, missing due to decay, and filled permanent tooth surfaces during the four year study period. DMFS increment scores were evaluated for 9566 continuous participants who had both baseline and final examination scores. Those children in grades 5, 6, and 9 at the end of the study represented about 50 per cent of the original sample from the nine sites. Covariance analyses were used to control for differences between sites that might have resulted in misleading results. These analyses indicated that the most comprehensive combination of preventive procedures (Regimen 1) prevented from 40 to 66 per cent of the decay, compared to that experience by the longitudinal control group (**Table 6**). However, because of the generally low incidence of decay during the study period, this difference represented a four year savings of only one to two surfaces (**Table 7**).[7]

Virtually all of the treatment effectiveness resulted from the clinical procedures and, with one exception, sealants were responsible for essentially all of the clinical effect. The one exception was in Cohort 5 at nonfluoridated sites where the prophy/gel and sealant procedures were about equally effective in preventing decay. None of the pro-

gram's classroom procedures consistently prevented a practically significant amount of decay. Only in one regimen did the combination of fluoride mouthrinse and tablets achieve a statistically significant effect. This occurred in Cohort 1+2 at nonfluoridated sites, but amounted to less than one half surface in four years.

TREATMENT COSTS

One purpose of the NPDDP was to determine the costs of delivering various combinations of preventive procedures in a real world setting.[8] Direct costs reflect labor, materials and capital. In addition, there are overhead costs that accrue as a result of vacations and holidays, slack time, administration, management, public relations, and sick leave. However, in reporting NPDDP cost only direct costs are included.

Detailed records of personnel costs, time charges, supply use, and other expenditures during the second and third years of operation yielded estimates of the direct cost (i.e., cost incurred in the actual provision of care for each of the five dental care regimens offered). Actual direct costs per child varied greatly from site to site. Most of the variation in costs among sites reflected differences in local wage rates. When actual direct costs are adjusted to control for these influences, results from nine of the ten NPDDP sites clustered tightly around the averages shown in **Table 8**.

Two distinct types of preventive dental care were included in the five regimens; one type was classroom-based, represented in pure form by Regimens 4 and 5. About 40 per cent of the cost in these regimens represented for educational materials and brushing/rinsing supplies; 60 per cent of costs were for supervision and assistance by local site staff. The other type of care was clinical, provided at the school twice annually by hygienist-assistant teams using portable equipment. Costs for this type of care, represented in pure form by regimen 3, were about 80 per cent labour, 10 per cent materials, and 10 per cent imputed rental for the portable clinic equipment.

The contents of **Table 8** can be used to estimate the direct costs of the various combinations of procedures actually offered by the NPDDP. It is also possible to extract information about the direct costs of combinations of program procedures that were not offered. For example, the difference in direct cost between regimens 4 and 5 – $3.41 per child per year – is the direct cost of adding a fluoride mouthrinse to an existing program of plaque control and dental education. The total direct cost of a mouthrinse-only program would be more than this because it would include direct costs shared by regimens 4 and 5 (e.g., inservice training for teachers) that net out of the comparison.

Similarly, the difference in direct costs between regimens 1 and 3 – $14.90 per child per year – is the incremental direct cost of a mouthrinse-brushing-education classroom program, given that a clinical program is already in place. Because this incremental direct cost is almost identical to the full direct cost of such care, represented by regimen 4, one may infer that clinic and classroom care have few if any shared costs. Finally, a comparison of the direct costs of regimens 2 and 4 suggest that the incremental cost of either sealants or prophy/gel is $22.82 per child per year. If it is correct to infer that clinic and classroom care do not share costs, this incremental cost is also a fair approximation of the total direct cost of a single clinical procedure.

Overhead costs in the NPDDP were about equal to direct costs; total costs of care per child per year, therefore, were about double the estimates shown here. The demonstration character of the NPDDP created methodological problems with overhead costs and undoubtedly inflated them as well. For these reasons, overhead costs are not included. It should be remembered, though, that an ongoing program along the lines of any of the NPDDP's five regimens will have some administrative burdens and slack periods, and the direct cost estimates presented here are only lower bounds of the expected total costs per child per year. Thus, it cannot be emphasized too strongly that all these estimates show what school-based preventive dental care should cost under favorable conditions with no allowance whatsoever for program administration, slack periods during the day, week, or year, or other overhead expenses.

DISCUSSION

As frequently occurs when results of scientific investigations are counter to conventional wisdom, the findings of this study have stimulated a highly visible controversy

TABLE 7

Mean four-year DMFS increments by regimen, cohort, and fluoridation status

	Nonfluoridated		Fluoridated	
	Cohort	Cohort	Cohort	Cohort
Regimen	1+2	5	1+2	5
1. Comprehensive	1.23**	2.84**	0.90**	1.05**
2. Modified Comp.	2.45**	4.10	1.19**	1.45**
3. Clinic	1.45**	2.92**	0.95**	1.33**
4. Classroom	2.46**	5.30	2.15	3.68
5. Education	3.01	5.35	2.44	3.49
6. Control	3.13	4.75	2.19	3.07

NOTE: *Differs from the control regimen at the 0.05 level.
**Differs from the control regimen at the 0.001 level.

TABLE 8

Adjusted average direct costs per child per year (in 1981 Dollars)

		Direct Costs			
Regimen	Procedures	Labor	Materials	Capital	Total
1	Sealants Prophy/gel Fluoride mouthrinse Plaque control Education	39.92	10.89	4.11	54.92
2	Sealants or prophy/gel Fluoride mouthrinse Plaque control Education	26.69	8.92	2.35	37.97
3	Sealants Prophy/gel	31.80	3.95	4.26	40.02
4	Fluoride mouthrinse Plaque control Education	8.21	6.94	–	15.15
5	Plaque control Education	7.36	4.38	–	11.74

within the profession. The results of this program raise serious questions about the effectiveness and efficiency of current public health programs. By the same token, there are elements of this program itself that have been questioned. The program does not represent a random sample of children or communities in the United States. Treatment regimens were assigned to schools not to individual children. A large number of examiners was employed without any concerted effort to have the same examiner evaluate the same children each year. The results of the fluoride mouthrinse are based on use by first and second grade children over four years but on only about one and one-half year use by fifth grade children. The selection of first, second and fifth grade children limit the potential for demonstrated results over a four year period. Design anomalies such as variations in the availability of children participating in clinical procedures may have influenced costs. Some highly valuable data such as the condition of primary teeth were not collected. All of these points were examined carefully and thoroughly by the study team and none was shown to have had sufficient effect to compromise the conclusions of the study.

It must be remembered that this study was conceived by AFDH in 1973 and designed in 1975, a decade ago, and was based on the four commonly held assumptions previously mentioned. Furthermore, it was expected that the program would provide a menu of preventive services along with supporting effectiveness and relative cost data to serve as a logical basis for a national, school-based preventive dentistry initiative. Instead, quite a different result occurred.

The assumptions proved false. We were in an unrecognized period of secular decline in dental caries and had designed a program for a level of disease that never developed. All of the procedures, especially those based on the provision of fluorides, were less effective than originally thought. When standard accounting methods were applied to an operating program, the actual costs of preventing a carious surface proved to be much higher than those reported previously. Finally, absentee rates and the large amount of time during which children were unavailable for clinical care revealed the schools to be a less efficient operating site than anticipated. In this regard however, the schools still represent the most efficient location for some types of health programs. One must simply be aware that between 25 and 40 per cent of the time may be unavailable for use for preventive dentistry activities.

Treatment effects for most procedures were generally consistent with those of other studies. Certainly, the value of sealants in public programs was confirmed. The lack of a preventive effect for brushing and flossing and for the educational program is not surprising, given the relatively limited period of the study, and also is consistent with the results of other studies. The most controversial finding from this study concerns the lack of practically significant effectiveness of school-based fluoride mouthrinsing.

The failure of the fluoride mouthrinse to demonstrate the expected level of effectiveness is worthy of further discussion. In all probability the apparent reduced effectiveness is a result of a number of factors. First, the demonstrated reduction in caries among the child population, and the altered pattern of disease resulting from the secular decline, has reduced the proportion of smooth surface lesions. One probable cause for this alteration is an increase in the ambient fluorides in the environment. The increase in the percentage of the population enjoying the benefits of water fluoridation, either directly or indirectly, along with the large increase in use of fluoridated dentifrices over the past decade may have supplanted the fluoride effect heretofore attributed to mouthrinse programs.

Second, a careful review of the literature on fluoride mouthrinsing raises a number of questions related to the applicability of those studies to today's environment.[13] Many early studies were designed to provide efficacy data — Can the fluoride mouthrinse work?, rather than to provide effectiveness or efficiency data — Does the rinse work to an extent warranting its use in the current environment? Accordingly, those early efficacy studies frequently were conducted under conditions that are not realistic today, resulting in expectations that may have been inflated.

A third factor is that prior studies were designed under the assumption that caries prevalence and incidence were relatively stable. Thus, after rinse efficacy was demonstrated, many mouthrinse programs were conducted without concurrent control groups. Subsequent changes in disease levels then were misinterpreted as the effect of mouthrinsing, rather than a result of a generalized secular decline in dental caries, clearly demonstrated in the last decade.

The results of the NPDDP,[14] coupled with new epidemiologic data on dental caries in children, signal the need for thoughtful reappraisal of current public health policy. NPDDP data raise serious questions regarding the practical significance of commonly applied school based preventive procedures. Epidemiologic data show a marked decline in dental caries, particularly during the past decade, and the disproportionate distribution of serious amounts of disease in a relatively small percentage of the children. These factors suggest that the equity approach to the administration of preventive procedures, wherein all participants receive the same type and amount of care, regardless of individual condition, may no longer be reasonable.

We believe the time has come for revision of current preventive policy leading to the adoption of methods for concentrating limited resources on those in greatest need. Targeted preventive care then emerges as the most reasonable approach to address the uneven distribution of debilitating dental caries in children. However, the adoption of targeting requires answers to a number of difficult questions and an important philosophical change by the dental public health community. Pursuit of answers to those questions represents the research agenda for dental public health for the 1980s.

CONCLUSIONS

1. This study showed, once again, that communal water fluoridation has a dramatic and cost effective impact on dental caries. Accordingly, water fluoridation should receive primacy when new preventive programs are contemplated.
2. Classroom preventive procedures, including fluoride mouthrinse programs, are of limited value in achieving a significant preventive effect.
3. Among the professionally applied preventive procedures sealants are, by far, the most effective. However, their cost may limit mass application in public health programs.
4. There is a disproportionate distribution of dental caries in the youth of the United States. Sixty per cent of the disease occurs in about 20 per cent of the children. Eighty per cent of the children have little or no caries problems.
5. Those children with the greatest problem are generally of low socioeconomic status with disproportionate minority group representation.
6. Serious questions are raised as to the practical effectiveness of several accepted preventive procedures calling for a reevaluation of current public health policy.

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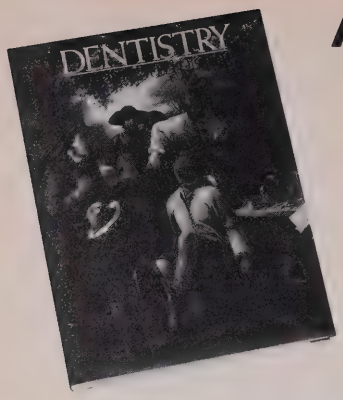

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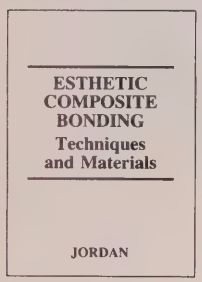

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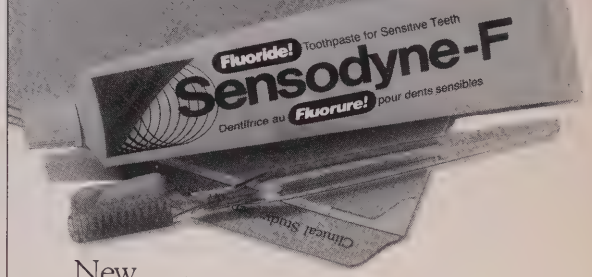

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LE DOMMAGE NERVEUX

UN INCIDENT OU ACCIDENT COURANT EN MÉDECINE DENTAIRE

Guy Maranda, DDS, FRCD(C), FICD, FAIDS
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RÉSUMÉ:

L'auteur constate que toutes manipulations dentaires, chirurgicales ou autres peuvent amener des problèmes d'ordre sensitif, surtout au niveau des branches du trijumeau.

Diverses explications basées sur l'anatomie et l'expérience chirurgicale sont décrites et elles expriment l'étroite relation de ces incidents avec la médecine dentaire.

SUMMARY:

The author reviews the possible neurological problems arising from a normal dental practice.

A review of different etiologic factors is made based on personal surgical experience which might influence these incidents.

Le dentiste qui accomplit de la chirurgie buccale ou des actes dentaires, s'expose à créer des incidents. Plusieurs ont déjà pû vérifier, de façon personnelle, cet énoncé par la persistance chez leurs patients de dyesthésie, paresthésie de la langue, des lèvres et des muqueuses buccales.

Plusieurs dentistes ou médecins ne comprennent pas la raison de ces symptômes. Est-ce l'intervention elle-même ou est-ce l'anesthésie qui est fautive?

Le patient s'informera, s'interrogera sur les circonstances qui ont pû entraîner les symptômes ci-haut décrits. ''Est-ce que cette condition est permanente? Combien de temps vont prendre les symptômes pour disparaître? Est-ce que ça va disparaître? Quel est le procédé qui a pû engendrer ces symptômes et finalement est-ce que ceci aurait pû être prévenu?''

Voilà autant de questions qui demeurent pour certains patients et aussi les dentistes très énigmatiques.

Ces conditions peuvent être rencontrées soit à la suite d'une chirurgie ou encore de l'administration d'un anesthésique local. Ces symptômes sont habituellement indicatifs d'un traumatisme d'une des branches nerveuses ou l'acte chirurgical ou anesthésique a été posé et la durée des symptômes pourra dépendre de la sévérité ou de l'étendue de la blessure accidentelle ou incidentelle que le patient a reçue.[1]

À l'occasion, on peut rencontrer un dommage au niveau du nerf facial, ce qui causera une faiblesse d'une des branches motrices, occasionnant une paralysie plus ou moins complète de la lèvre, de la paupière du côté affecté. Évidemment, la paralysie musculaire dépendra de la branche nerveuse qui est affectée de façon spécifique.

Le nerf mandibulaire inférieur (3^{e} branche du trijumeau)

Un dommage à cette branche anatomique occasionnera une sensation d'engourdissement au niveau de la lèvre et du menton du côté affecté. L'on peut rencontrer cette condition lors de l'ablation de dent incluse (troisième molaire inférieure), dû à la proximité des racines par rapport au canal mandibulaire.

La prévention, dans ces cas, après avoir procédé à une bonne évaluation clinique et radiologique, doit amener le dentiste à bien discuter avec son patient des relations anatomiques qui sont ici en cause, de telle sorte que ce dernier puisse bien comprendre la situation de façon précise, claire et sans équivoque, ce qui éventuellement pourrait amener un imbroglio médico-légal.

La prévention de ces complications demandera une attention toute particulière lors de la chirurgie, de façon à ne pouvoir s'approcher du canal mandibulaire et de pouvoir dégager les racines de la dent incluse, permettant ainsi d'éviter une compression mandibulaire ou toutes autres branches nerveuses accessoires présentes dans la région.

De plus, il est aussi préconisé, à l'occasion, de sacrifier la dent voisine, pour permettre de créer de l'espace et possiblement dégager la région de la dent incluse, ce qui peut permettre un déplacement intra-osseux de cette dite dent et souvent amener une éruption évitant ainsi une chirurgie qui pourrait être très complexe et même morbide.

Dans les cas des patients édentés mais avec persistance d'une dent incluse dans la région de la troisième molaire, l'on peut suggérer de procéder au dégagement de la couronne de cette dent et attendre quelques mois, permettant ainsi de pouvoir amener une éruption, ce qui crée une diminution de la proximité du canal mandibulaire par rapport à la dent incluse et en même temps, l'ablation chirurgicale de la dent pourrait être complétée dans un autre temps opératoire.

Le canal mandibulaire, de par sa position anatomique, peut être en très étroite relation avec les apex de toutes les molaires. De plus, des débris pathologiques ou une pathologie dentaire, péridentaire, ou intra-osseuse peuvent provoquer la compression du canal mandibulaire ou même encore l'envahissement du canal mandibulaire par ce processus.

Le même phénomène peut se produire lorsqu'il y a ablation de tout corps étranger ou de pathologie dans la région, si une attention très particulière n'est pas faite.

Le nerf alvéolaire inférieur en lui-même dispose d'une capacité de régénération qui est assez bonne. En effet, le canal mandibulaire lui-même sert de guide à la croissance ainsi qu'à l'union des fibrilles nerveuses qui se régénèrent.

Toutefois, il peut arriver que la régénération ne se fasse pas à l'intérieur du canal. Nous assistons alors à la fabrication d'un névrome qui pourra créer une douleur réellement très difficile à supporter. Nous pouvons d'ailleurs constater cet état de chose lors de la section du canal dans des cas de fracture du maxillaire inférieur.[2-3]

La durée requise pour la régénération de cette lésion est très variable. On constate par expérience que lorsque le canal ou le nerf est traumatisé par pression seulement, la fonction peut revenir à la normale sur un espace de trois (3) à six (6) mois.

Une sensation de picotement à la région innervée par cette entité anatomique se produira, mais dans un cas de section totale, on peut envisager facilement une période de régénération pouvant aller jusqu'à plusieurs années.

Le nerf lingual

Le nerf lingual est facilement traumatisé lors de la chirurgie dans la région des molaires ou encore lors d'injection au niveau de la troisième branche du trijumeau.

La manipulation pour l'ablation de dents incluses ou même de molaires qui ont fait éruption peut amener une pression du côté lingual et comme le trajet anatomique du nerf peut être en très étroite relation avec un lambeau lingual, celui-ci peut être sectionné.

On n'insistera jamais assez pour mentionner que des incisions pour réflecter un lambeau permettant de rejoindre une troisième molaire doivent toujours demeurer du côté buccal et suivre la crête externe oblique du maxillaire inférieur, ce qui fait en sorte que l'on s'éloigne de la région où le nerf est situé.

Lorsque l'on enlève un sac folliculaire dans la région de la troisième molaire, il est bien important de bien examiner le tissu avant de le sectionner ou même d'exercer une traction, pour permettre de le libérer de sa région.

Nous avons pû constater à de très nombreuses occasions que la position linguale d'une dent incluse fait en sorte qu'il existe une résorption de la plaque linguale du maxillaire inférieur et que conséquemment, le sac folliculaire est à proximité sinon associé avec le nerf lingual et en conséquence, une section traumatique se produira lors de l'ablation du sac. La régénération de ce nerf se fait très difficilement.

Lors de l'ablation de la deuxième ou de la troisième molaire, une dissection très précise et avec beaucoup d'attention doit se faire.

Il faut donc faire en sorte de ne pas élever ou soulever les structures anatomiques situées du côté lingual, en particulier la plaque osseuse linguale à laquelle souvent est rattaché ou juxtaposé le nerf lingual.

Lors du bloc mandibulaire, quelques patients pourront ressentir une douleur soudaine (choc électrique) avec une sensation immédiate d'engourdissement au niveau de la langue. Cette condition indique que l'aiguille a été porté très près du nerf lingual ou même a pû à la rigueur le transpercer. Cette condition provoquera une paresthésie du côté affecté. Cette condition durera plusieurs jours.

L'anatomie du nerf lingual nous démontre que l'insertion de l'aiguille placée trop médialement dans ou à proximité du ligament ptérygo-mandibulaire permet de venir en contact direct avec le nerf lingual et ainsi le traumatiser. Cette condition toutefois peut être considérée comme temporaire, puisqu'il est très peu probable que l'aiguille sectionne le nerf.

Le nerf mentonnier:

Une blessure au nerf mentonnier se situe habituellement à l'endroit où le trou mentonnier apparaît sur le bord buccal du maxillaire inférieur et à cause de sa proximité avec les racines des prémolaires ou même encore des prémolaires incluses.

Il faut absolument éviter de comprimer ou sectionner la plaque alvéolaire buccale dans la région du trou mentonnier, pour éviter les problèmes associés avec ce nerf.

L'ablation des racines ou encore des dents incluses dans cette région est souvent associée avec l'atrophie du maxillaire inférieur, ce qui fait que le trou mentonnier se situe très près de la crête osseuse alvéolaire.

Dans certains cas, la position du nerf est telle que le patient doit être averti non pas seulement d'une possibilité mais effectivement d'une paresthésie qui sera complète suite à des manipulations chirurgicales dans cette région.

Le pronostic est très défavorable parce que le trou mentonnier est habituellement détruit de façon permanente et ainsi il n'y a pas de possibilité de régénération dans le canal lui-même.

Toutefois on rencontre des cas où une paresthésie temporaire peut survenir, suite à une injection directement dans le trou mentonnier. Habituellement, cette condition peut se rétablir dans une période de quelques semaines.

L'utilisation d'une infiltration au niveau du trou mentonnier n'est pas une chose essentielle quand on a déjà fait un bloc mandibulaire. Donc en conséquence, on peut éviter ce double traumatisme à la région du trou mentonnier, évitant ainsi une possibilité de problème.

Le nerf sous-orbitaire:

Le nerf sous-orbitaire peut aussi perturber lors d'intervention chirurgicale.

L'ablation simple de dent dans les régions concernées, soit canine, prémolaire ou molaire, ne causera habituellement pas de problème avec les branches nerveuses sous-orbitaires.

Toutefois l'ablation de dent incluse, canine, prémolaire et même des dents surnuméraires qui se situent très haut dans le vestibule buccal, peut amener certaines complications surtout si l'opérateur ne fait pas attention pour bien rétracter les tissus pouvant ainsi créer un enchevêtrement et même une compression ou encore lacération avec l'utilisation de fraises chirurgicales.

Le traumatisme qui se rencontre le plus souvent dans cette région est celui occasionné avec une aiguille, mais là encore, quoiqu'il existera une paresthésie, celle-ci ne sera que temporaire.

Dans les cas de traumatisme ou de fracture de l'os malaire, très souvent les patients démontreront une paresthésie s'étendant au niveau sous-orbitaire, à l'aile du nez et à la lèvre supérieure et après qu'il y ait eu réduction de fracture, après quelques semaines, habituellement ces symptômes disparaîssent.

Le nerf facial:

Le nerf facial avec ses branches accessoires est presque exclusivement un nerf moteur qui peut être endommagé lors de certaines interventions chirurgicales.

Pour le dentiste, il est important de considérer que ce nerf est en très étroite relation avec des abcès à la partie inférieure du visage et que lors de drainage de cesdites infections, si on ne respecte pas l'anatomie concernée ainsi qu'une dissection mousse, on peut facilement sectionner une branche nerveuse de ce nerf moteur.

Cette section du facial ou tout au moins d'une branche de celui-ci est un phénomène qui est excessivement sévère et très différent, puisqu'une atrophie des muscles innervés par ce nerf pourra se produire, car le muscle n'a plus aucune stimulation électrique. Si cette condition se poursuit pendant une période de temps assez longue, le muscle s'atrophiera.

Si toutefois on est capable de pouvoir réapproximer les parties sectionnées, une régénération et une union pourront s'établir. Toutefois si le muscle démontre déjà des signes d'atrophie très prononcés, même après la période de régénération, il est plausible de croire que le système musculaire produira son effet habituel.

Si l'on suspecte la section d'une branche nerveuse du nerf facial, on devra toujours immédiatement consulter un neurochirurgien, un chirurgien buccal ou toute autre

personne pouvant être en mesure de régler le problème.[4]

De plus, il faut songer à faire conférer au patient une stimulation des muscles concernés, soit par de la physiothérapie ou encore par stimulation électrique, de façon à ce qu'il n'existe pas d'atrophie musculaire avant qu'une correction ou une évaluation subséquente soit faite.

Toutefois, on peut rencontrer ce genre de paralysie faciale temporaire suite à une injection de la troisième branche du trijumeau, dû au fait que l'aiguille a été dirigée trop loin derrière le maxillaire inférieur pour finalement transpercer la parotide, ou encore trop haute pour se diriger dans l'échancrure sigmoïdienne et ainsi encore une fois s'approcher de la glande.

Dans ces cas, la solution anesthésique se répendra dans la glande salivaire et affectera le nerf facial.

On pourra alors voir soit une ou des parties du visage qui seront affectées, manifestant alors une immobilisation de la lèvre, des paupières, ou de certains muscles faciaux.

Cette condition est toutefois temporaire et elle durera tant que l'effet de l'anesthésique local ne sera pas dissipé.

Régénération nerveuse:

Dans les cas où il y a eu dommage à des fibres nerveuses soit sensitives ou musculaires, la régénération se fera en partance de la partie distale sectionnée, pour s'établir vers la partie mésiale.[5]

Il est donc important de pouvoir, si on constate qu'il y a eu section d'une fibrille nerveuse, de réapproximer la région le mieux possible, soit en plaçant les deux (2) parties sectionnées en étroite juxtaposition ou encore en tentant de les rapprocher et de les suturer avec un matériel très petit.

Actuellement, des techniques neurochirurgicales avec microscope chirurgical permettent de pouvoir localiser les parties mésiales et distales qui ont été endommagées et de les réapproximer.

Toutefois, ces conditions demeurent encore très difficiles à contrôler et les techniques sont excessivement laborieuses. La physiologie cellulaire permet quand même d'espérer d'obtenir une certaine régénération, sans pouvoir toutefois poser un diagnostic précis pour la condition future.

RÉSUMÉ:

En médecine dentaire, on se sert constamment d'anesthésiques locaux pour procéder à des restaurations dentaires ou toutes autres manipulations. De plus, la partie chirurgicale peut amener, lors de l'ablation de dents incluses, des dommages accidentels ou incidentels à certaines branches nerveuses.

Nous savons que la régénération nerveuse pourra s'établir sur une certaine période de temps (jour-semaines-mois) et dans certains cas cette condition demeure permanente.

De plus en plus nous pouvons constater et ceci d'après les rapports des compagnies d'assurance qui s'occupent de responsabilité professionnelle, qu'il existe une demande de plus en plus croissante de patients qui ont subi ce problème et qui tentent de récupérer des sommes monétaires plus ou moins importantes.

Il est donc excessivement important de mentionner que l'on doit avoir une attention très importante lors de l'ablation de dents incluses au niveau du maxillaire inférieur et de plus, que des documents appropriés doivent être placés au dossier et aussi expliquer au patient, de sorte que celui-ci réalise pleinement en pré-opératoire les difficultés dues à l'anatomie de la région opérée.

Souvent ces explications permettront au patient de bien évaluer les conditions dont il est porteur et ainsi permettre d'éviter des imbroglios qui peuvent amener des poursuites médico-légales.

Si le patient n'accepte pas de se soumettre à une intervention chirurgicale à cause des facteurs qui ont été mentionnés, il ne doit pas être forcé et ceci doit être indiqué au dossier de façon claire et précise.

De plus, le patient devrait toujours signer l'autorisation pour le traitement médical, ce qui pourrait à la rigueur libérer le dentiste de toute faute professionnelle.

En conclusion, un traumatisme nerveux aux branches du trijumeau et du nerf facial a quand même une certaine capacité de régénération, en autant que le site opératoire ne démontre pas de délabrement excessif et qu'il puisse y avoir une réapproximation du tronc nerveux, permettant ainsi une régénération et une union éventuelle.

Toutefois, il est important que le dentiste puisse bien évaluer les conditions qui prévalent lors d'une chirurgie et ainsi tenter d'éviter les problèmes qui ont été décrits ci-haut.

Pour demande de tirés-à-part:

Guy Maranda, DDS, FRCD(C), FICD, FAIDS
École de médecine dentaire
Université Laval
STE-FOY (QC)
G1K 7P4

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5. Tundall D.A., Gregg J.M., Hanker J.S.: Evaluation of peripheral nerve regeneration following crushing or transection injuries. *J.O.M.F.S.* 42-314-318, 1984.

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Announcements

JUNE/JUIN

June 6-8: Dr. Thomas F. Mulligan, of Phoenix, Arizona presents a three day course in Montreal, Quebec. Dr. Mulligan is the author of the book "Common Sense Mechanics". Co-Sponsored by CEGOO Study Club and IAO Quebec. Contact: Susan Giansante, 514-932-6322.

June 6-8: The 24th annual Congreso Nacional y 4th Congreso Internacional de odontologia y estomatologia, Seville, Spain. Contact: Andaluza de Congresos, S.A. Avda, San Francisco Javier s/n Edificio Sevilla, 2 SS, 41005, Seville.

June 12-14: National Conference on Long Term Care, sponsored by the Canadian Long Term Care Association, Hotel Hilton, Quebec City. Contact: Canadian Long Term Care Association, 613-237-9837.

June 12-16: Saskabash. Western Canada Dental Society Convention, Saskatoon, Saskatchewan. Contact: Dr. Keith Hamilton 306-374-7272.

June 16-20: The 4th International Congress of Auxology, Université de Montréal, Montréal, Quebec. Contact: Micheline Brault Dubuc, General Secretary, International Congress of Auxology, Université de Montréal, CP 6128, Succursale A, Montréal, Qué. H3C 3J7.

June 17-19: Thirteenth Annual Conference for Dental Continuing Education (ECDCE) at Cape Codder Hotel, Falmouth, Mass. Contact: Ms. Pauline Bress, University of Buffalo, N.Y., 194 Farber Hall, Buffalo, New York. 14214 Telephone 716-831-2836.

June 20-23: The World Symposium on Occlusion and the Temporomandibular Joint, London, England, in the Kensington Town Hall Conference Centre. Contact: Conference Clearway Ltd. Conference House, 9 Pavilion Parade, Brighton, Sussex, BN2 1RA United Kingdom.

June 21-23: Florida National Dental Congress, Buena Vista Palace, Lake Buena Vista, Orlando, Florida. Contact: Florida Dental Association, 3021 Swann Avenue, Tampa, Florida, 33609.

June 22-29: Yukon Dental Association, Summer Convention '85, Kluane National Park, Contact: Dr. John Stern, 3089 3rd Ave., Whitehorse, Yukon, Y1A 5B3.

June 23-26: Canada Safety Council 17th Annual Conference, St. John's Newfoundland. Contact: The Canada Safety Council, 1765 St. Laurent Blvd., Ottawa, Ontario, K1G 3V4, 613-521-6881.

June 24–July 19: American Dental Professionals for Israel announces its annual "Summer Program in Israel '85" for dental students. Contact: 515 Park Avenue, New York, New York, 10022 or 212-486-4266 for details.

June 25-28: The 50th Annual meeting of the Pacific Coast Society of Prosthodontists, Westin Bayshore Hotel, Vancouver, B.C. Contact: Dr. David Eggleston, 1441 Avocado Suite 508, Newport Beach, California, 714-640-5680.

June 27-28: "Oral Care of the Institutionalized Patient" by the University of Washington, Continuing Dental Education Dept., co-sponsored by Dental Care for the Disabled, and the Academy of Dentistry for the Handicapped. Seattle, Washington. Contact: Continuing Education, SC-62, University of Washington, Seattle, Washington, 98195, 206-543-5448.

JULY/JUILLET

July 3-5: Bermuda Dental Association 1985 Convention. Guest speakers include Dr. Ron Jordan from the University of Western Ontario. Contact: Dr. Robert Gibbons, Erin, Paget 6-20, Bermuda, 809-296-4477.

July 8-9: National Conference on the Delivery of Periodontal Health Care, Hillenbrand Auditorium, American Dental Association Building, 211 E. Chicago Ave, Chicago, Ill. USA. Contact: American Academy of Periodontology, Room 924, 211 E. Chicago Ave., Chicago, Ill. 60611.

AUGUST/AOÛT

August 1-21: American Dental Professionals for Israel's annual Summer Program in Israel '85" for dental students. Contact: American Dental Professionals for Israel, 212-486-4266, or write 515 Park Ave., New York, New York, 10022.

August 4-9: Dental Volunteers for Israel, International Symposium, Jerusalem, Israel. Topic: Today's Prevention for Tomorrow's Dentistry. Contact: Kenness International, 1 Park Ave., New York, New York. 10016, 212-684-2010 or Dr. M. Florence, 416-925-8933.

SEPTEMBER/SEPTEMBRE

September 11-14: Annual meeting of the American Academy of Periodontology, San Francisco Hilton and Tower, San Fran-

cisco California. Contract: The American Academy of Periodontology, 211 E. Chicago Ave., Room 924, Chicago, Ill. 60611.

September 12-14: 37th Annual New Orleans Dental Conference, New Orleans Hilton and Towers, New Orleans Louisiana. Conference theme is "The Magic of Fine Dentistry." Contact: The Conference Office, 3101 West Esplanade Avenue, Suite 119, Metairie, LA. 7001, 504-834-6449 for information.

September 16–December 12: UCLA school of Dentistry refresher program. UCLA Extension Downtown Centre, Los Angeles, California. Contact: Continuing Education in Dentistry, UCLA Extension, 10995 Le Conte Avenue, Room 614, Los Angeles, California, 90024, 213-825-9187.

September 18-21: 4th International Dental Congress on Modern Pain Control. Bologna, Italy, Pallazzo dei Congressi. Contact: Masson Italia Congressi, Via Baldissera, 4-20129, Milan, Italy.

September 20-27: Annual meeting of the Canadian Society of Forensic Science jointly with the **Society of Forensic Toxicologists** and the **American Society of Questioned Document Examiners**, Hyatt Regency Hotel, Montreal, Quebec. Contact: Executive Secretary, Canadian Society of Forensic Science, 2660 Southvale Cres., Suite 215, Ottawa, Ont., K1B 4W5, 613-731-2096.

September 21-27: 1985 Congress of the Federation Dentaire Internationale is being held in Belgrade, Yugoslavia.

September 27-29: Canadian Academy of Endodontics annual meeting, Ottawa Ontario, Four Seasons Hotel, Contact: Dr. Lorne Chapnick, 2200 Yonge St., Suite 1009, Toronto, Ont. M4S 2C6.

September 27-29: Fifth International Dental Electrosurgery Conference-Workshop, Grand Island Holiday Inn, Niagara Falls, New York. Contact: Dr. M.J. Oringer, Academy Executive Secretary, P.O. Box 205, Thousand Island Park, New York, 315-482-9592.

September 29–October 2: Canadian Dental Association national convention. Ottawa, Ontario, at Canada's Capital Congress Centre. Contact: Canadian Dental Association, 1815 Alta Vista Dr., Ottawa, Ont. K1G 3Y6.

September 29–October 1: Annual Meeting of the Association of Prosthodontists of Canada, Four Seasons Hotel, Ottawa, Ontario. Contact: Dr. Donald Kramer, 506-700 Bay Street, Toronto, Ontario, M5G 1E2.

OCTOBER/OCTOBRE

October: Golf at Gleneagles, Atlantic Dental Seminars, Gleneagles Scotland, "Comprehensive Adult Dentistry". Contact: Course Director (North America) 1545 Birmingham St., Halifax, N.S., B3J 2J6.

October 8-12: Austrian Dental Congress, Graz, Styria, Austria. Contact: Styrian Dental Surgeons and Dentists Association, Univ.-Zahnklinik, A-8036, Graz -LKH, Austria.

October 13-18: 6th Congress of the International Society for Laser Surgery and Medicine. Organized by the Israel Society for Laser Surgery and Medicine. Jerusalem, Israel. Contact: DIT Travel/Convention Division, 1183 Finch Avenue West, Suite 203, Downsview, Ontario M3J 2G2, Attention: Rifka Boruchowicz, Convention Secretariat, phone 416-663-9100/07.

October 30: The first national and international scientific encounter of the dental schools, during the XVIII National and International Congress of the Mexican Dental Association. Contact: Admgen Ezequiel, Montes 92, Mexico, D.F., 06030 Mexico 915-566-61-33.

NOVEMBER/NOVEMBRE

November 2-5: 126th Annual Session of the American Dental Association, San Francisco California. Contact: The American Dental Association, 211 East Chicago Ave., Chicago Ill., 60611 U.S.A.

November 7-9: First International Beijing (Peking) Symposium in Dentistry and First International Dental Trade Show. Inaugural theme will be dental materials and their clinical use. Contact: Quintessence Publishing Co. Inc., 8 S. Michigan Ave., Suite 2301, Chicago ILL. 60603, U.S.A. Telephone (800) 621-0387.

November 18-21: American Dental Association, Foods Nutrition and Dental Health Program in co-operation with the University of Texas, Health Science Centre at San Antonio, Dental School, announces a scientific **consensus conference on Methods for Assessment of the Cariogenic Potential of Foods**, University of Texas Health Sciences Centre, San Antonio, Texas. Contact: Dr. Dominick DePaola, Chairman, 7703 Floyd Curl Drive, San Antonio, Texas, 78284, 512-691-6601.

November 22-23: The Professional Development Committee of the Ontario Dental Association will present a symposium on Periodontics in Toronto. Contact: Dr. Jeffrey Goodman, Director of Professional Development, 416-922-3900.

November 28: 1985 Toronto Academy of Dentistry Winter Clinic, Metropolitan Toronto Convention Centre. Contact: Toronto Academy of Dentistry, 234 St. George St., Toronto, Ont. M5R 2P2, 416-967-5649.

November 30: American Academy of Dental Electrosurgery annual meeting. New York Hilton Hotel. Contact: American Academy of Dental Electrosurgery, 57 West 57th St., Suite 1001, New York, New York, 10019, 212-755-6630.

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January 30–February 2, 1986: HealthCom '86, Las Vegas, Nevada, Las Vegas Convention Centre. Highlights computer, telecommunications and information systems specifically for the healthcare industry. Contact: Lin Fish/Pete Soraparu, Fleishman Communications Inc. 312-397-7744.

April 7-12 1986: 23rd International Dental Show and German Dentists' conference in Cologne, Germany. Contact: Messe-und Ausstellunge-Ges. m.b.h. Koln, Messeplatz, Postfacth 210760, D-5000 Koln 21 (Deutz) West Germany.

July 1, 1986: Applications are being accepted for the **Postdoctoral program, Dental Diagnostic Science at the University of Texas**, Health Science Center at San Antonio for the class beginning **July 1, 1986**. Address inquiries to: Office of the Associate Dean for Advanced Education, The Dental School, The University of Texas Health Science Centre at San Antonio, 7703 Floyd Curl Dr., San Antonio TX. 78284.

September 9-12, 1986: International Association of Oral Pathologists in association with the British Society for Oral Pathology – Biennial Congress, Edinburgh, Scotland. Contact: Dr. J.C. Southma, Department of Oral Medicine and Oral Pathology, University of Edinburgh, Chambers St., Edinburgh, Scotland, EH1 1JA.

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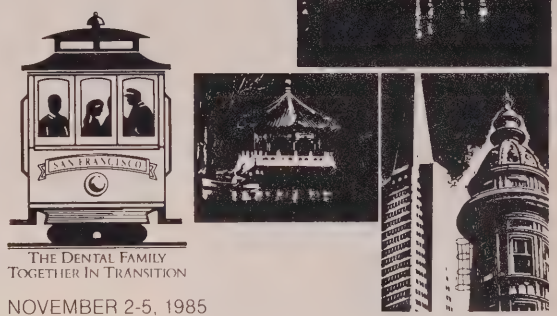

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ONTARIO—Dentist. Part-time and full time salaried positions available in Southern Ontario. Please contact: 416-524-2978.

ONTARIO—Dentist wanted for Community Health Centre downtown Toronto. Practice includes mixture of all aspects of clinical dentistry; out-reach; teaching responsibilities in association with U. of T., George Brown College. Full-time with guaranteed monthly income. Immediate opening. Resume and references to Director, West Central Community Health Centres, 64 Augusta Avenue, Toronto, Ontario, M5T 2L1.

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ONTARIO—July Locum—Experienced dentist required for modern downtown Toronto preventive-oriented office for July. Hygienist and staff will be in office: Send resumé to CDA Box No. 2274.

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FLORIDA—Wanted: Endodontist full time for multiple office group practice with well-established endodontic following. Must have Florida license. Please write: Family Dental Services, 220 N. Babcock Street, Melbourne, Fla. 32935.

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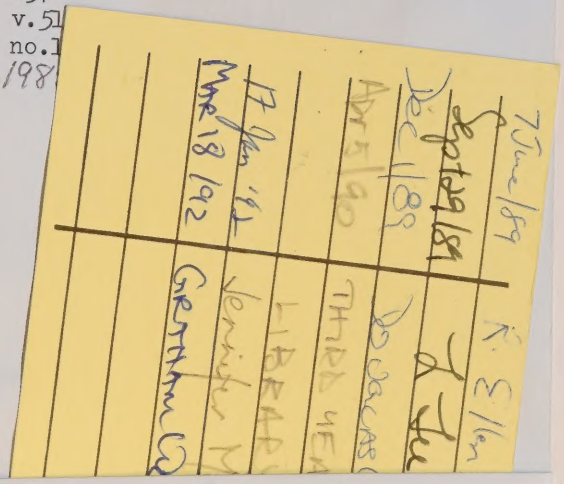

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